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BETWEEN TASK STRUCTURE AND CERTAIN OUTCOME
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The Ohio State University, Ph.D., 1975
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INDIVIDUAL DIFFERENCE VARIABLES AS MODERATORS BETWEEN
TASK STRUCTURE AND CERTAIN OUTCOME VARIABLES

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Barry A. Macy, B.B.A., M.B.A.

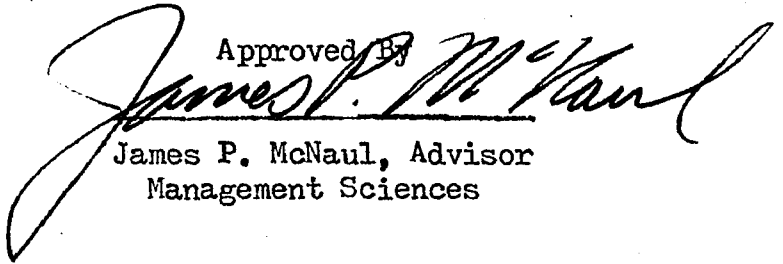
* * * * *

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Barry A. Macy

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CHAPTER I

THE PROBLEM AREA

Introduction

Members of a work organization develop beliefs and values upon which their actions are based. They obtain these beliefs, values, and preferences, called perceptions, by creating them. Members of any organization formulate their conceptions of what is good, fact, fiction, etc. from the environment around them. These beliefs, values, or conceptions can be fact or fiction. These perceptual ideas provide meaning to worker's lives. Necessarily, perception then influences workers' behavioral patterns.

Traditionally, perceptions, being operationalized through attitudinal questionnaires, have been studied and investigated by psychologists because early investigators provided theoretical concepts indicating the importance of insights into the human cognitive processes and their possible relationship to human behavior. In this research study, the primary focus is upon a particular set of independent and dependent job attitudes which are important for an understanding of employees' desires to perform effectively, worker satisfactions, and certain responses which result from the work setting. Job attitude research has typically considered only one kind of attitude: the employee's satisfaction with his job. It is one of the contentions of this study that attitude research should make a significant contribution

to the understanding and prediction of human behavior in work organizations. Consequently, the aspects of an individual's cognitive behavior to be investigated must be reconsidered. As Krech, Crutchfield and Ballachey (1962) indicate, attitudes include cognitive belief components, feeling components, and action tendencies. In this study, the cognitive belief components take the form of experienced task structure characteristics and certain individual differences; feeling components are indicated by three facet satisfactions; and Krech et al.'s action tendencies take the shape of perceived propensity to leave the organization.

The specific focus of this empirical field research is the relationships and interactions of certain individual personality differences acting as moderators between facets of task structure and certain outcome variables. This study concentrates only on certain sets of independent, moderator, and dependent variables in a correlative framework or analysis.

The contention is that the interaction between members' beliefs, values, and preferences (i.e., individual differences) and experienced task structure comprise much of the raw material for behavioral patterns and motivation theory. The thesis of this study is that the tasks performed by members of an organization together with their individual behavior patterns explain why people in different parts of the world and in different jobs have different and varied feelings about what motivates them. This study does not attempt to measure or test the various theories of motivation. It does, however, attempt to provide a basis for the study of hypo-

thesized interactional relationships between certain facets of job structure, individual differences, and particular outcome variables. These outcome variables take the form of three facet satisfactions (i.e., overall, pay, and job content) and propensity to leave the organization.

Since work has always been and seemingly will continue to be a highly significant nonfamily activity of most people, the study of work, job attributes, and worker perceptions of the characteristics of the job is an important research area. Since the early 1900's, scientific management emphasized the engineering approach as "the one best way or method" to manage. More recently, the human relations and "social man" movement has concentrated on the social factors in work and has assumed that the consequences of "dull" or repetitive tasks are constant dissatisfaction for all workers, regardless of individual differences. This dissertation's empirical investigation of the moderating effects of individual differences between task structure and certain outcome variables is based on the assumption that work and workers are complex. This complexity along with task characteristics and worker perceptions take the form of an interactional relationship among and between different sets of independent, moderator, and dependent variables.

This is not to imply that social interactions, organization structure, technology, and other factors do not influence workers' perceptions. It does imply that the experienced job characteristics inherent in the task itself influence worker responses and effect

certain patterns of interactions resulting in various degrees of outcomes. Working on a task an individual develops certain beliefs, preferences, and values specific to his experienced task characteristics which combine to effect certain organization outcomes. The specific task an individual is engaged in at a certain time is taken as a given in the conceptual model.

The conceptual theory, then, attempts to indicate the various interrelationships between individual differences and the facets of task structure which help to account for differences in what people believe, value, and prefer. In addition, this empirical research will provide support for various motivational theories in terms of some of the specific personality and task measures which influence job performance.

Specifically, this field study will investigate the following interactional model:

Figure 1: Simplified Version of the
Interaction Effect Between
Task Structure and Individual
Differences Upon Outcomes

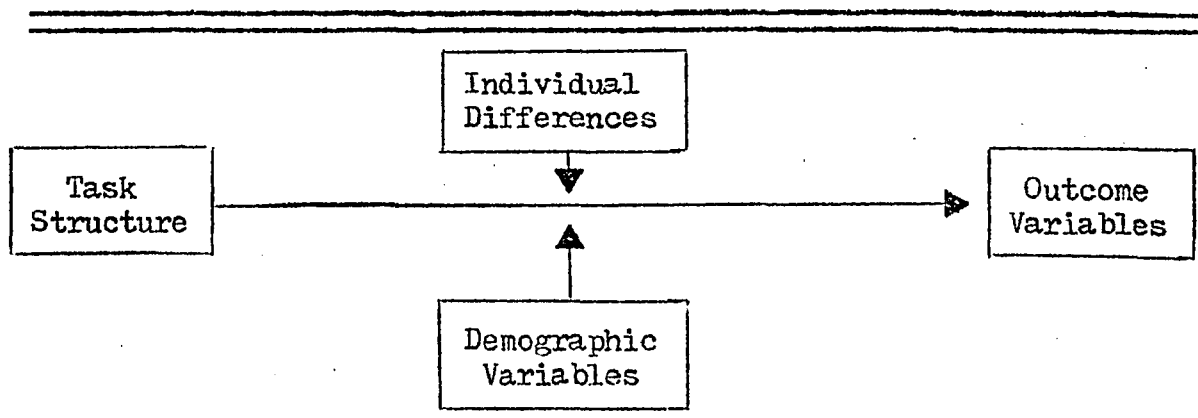


Figure 1 indicates that the individual difference variables and different demographic characteristics moderate the relationship between task structure and outcome variables. Due to certain statistical and methodological limitations inherent with multivariate designs, this study investigates only personality or individual difference variables acting as moderators between task structure and outcomes. A second hypothesis derived from Figure 1 is that when individual differences are held constant, task structure will be positively associated with one or more of the facet satisfactions. A third general hypothesis is that with individual differences held constant, task structure will be negatively associated with propensity to leave the organization.

Task structure is composed of five facets: (1) autonomy; (2) skill variety; (3) task feedback; (4) task identity; and (5) upward influence. These five experienced task facets have been the focus of hundreds of articles and/or books advocating changing an organization on the basis of commonly assumed job enrichment principles. These studies generally hold that a change in the facets of task structure will lead to high satisfaction regardless of individual differences.

Seven personality characteristics are hypothesized to moderate the relationship between the independent and dependent variables. These individual difference variables are: (1) internal-external life orientation; (2) self-esteem; willingness to accept a bureaucratic orientation divided into three bureaucratic orientation

facets¹; (3) hierarchy of authority; (4) division of labor; (5) rules for incumbents; (6) need for achievement; and (7) need for affiliation. The research objective in connection with the hypothesized moderation-interactional analysis performed on the five independent task structure facets and the seven moderator or personality measures with the four dependent outcome variables is to show the limitations of the commonly held job enrichment assumptions. These specific assumptions will be discussed in great length in Chapter II.

The three facets of satisfaction, overall, pay, and job, and propensity to leave the organization or perceived voluntary turnover, may be considered a product or outcome of the interaction between task structure and individual differences. It is assumed that these four dependent variables are a function of the experienced task structure and the individual differences.

This empirical research utilizes a field study design composed of two separate samples: (1) a large manufacturing organization located in a large metropolitan city in southeastern Texas; and (2) a large nonprofit hospital located in a medium-sized rural Ohio city. From the combined samples a total N of 1,409 (i.e., industrial sample of 861 and service sample of 548) was obtained. The data were gathered through a questionnaire during working hours

¹The three facets of an individual's willingness to accept a bureaucratic orientation were adopted from Hall (1961) and modified by Dr. James P. McNaull, The Ohio State University, and the writer. This work was done in conjunction with Herrick's (1974) Quality of Work Project (see p. 91 of this study for details of Hall's research.

in September and October, 1974, at the two sites by the writer and research associates from The University of Michigan's Institute for Social Research after some scales had been pretested in various well-lighted and noise-free conference rooms at different sites in Ohio. Pretest and final study scales were analyzed for reliability and validity. Other scales were adopted from past empirical research with the assumption that their proven reliability and validity would hold for these study samples.

In order to investigate the three previously stated general hypotheses in relation to one other and the commonly held job enrichment assumptions, a large and comprehensive sample composed of over two hundred job classifications was drawn from both an industrial sector and a public service organization. Respondents to the questionnaire ranged from beginning machine operators to executives in the industrial sample and aides and orderlies through top hospital administrators in the service site.

A response rate of 84 percent [i.e., an industrial rate of 86 percent (861/1003) and a public sector rate of 81 percent (548/679)] was obtained. The high response rate was a result of administering the questionnaire on paid work time within the two site facilities without company or hospital officials being present. Of course, complete confidentiality was guaranteed to all respondents. The reasons for the sixteen percent non-response rate were many. They included absenteeism, press of business, vacation, etc.

With these different contentions, theses, and assumptions in mind, the next sections of this chapter explore the specific pro-

blem area, indicate the importance of the research being undertaken, provide a conceptual-theoretical model, state the research objectives, and provide an organizational framework for the study.

Background

Historically, the rise of industrial organizations are associated with the emergence of automation and division of labor. One of the first advocates of division of labor, Adam Smith (1937), in the late 1700's indicated that the advantages were increased efficiency and saving of time. In the early 1900's the scientific management period, fathered by Frederick Taylor (1911), indicated that simplifying work and jobs would mean accomplishing work more efficiently; a less skilled employee would be required; the control exerted by management over the work flow and ultimately production would be increased; and eventually, profits to the organization would increase. Davis (1970) has categorized this philosophy as follows:

1. The man and his job are the essential building blocks of an organization. If the analyst designs these "right," the organization will be correctly defined.
2. Man is an extension of a machine, useful only for performing things that a machine cannot accomplish.
3. The men and their jobs--the individual building blocks--are to be welded together by supervisors or managers who will eliminate the uncertainties and variabilities that arise in the work environment.

4. The organization is free to use any available social mechanism to enforce compliance and to ensure its own stability.
5. Man is simply an extension of the machine, and obviously, the simpler the machine, the lower the costs. Thus, job fractionalization is a way of reducing the costs of carrying on the work and reducing the skill contribution of the individual who performs it.

While division of labor, the automated factory, and work specialization and fractionalization have increased industrial productivity, numerous conceptual and empirical studies suggest that the tools of work simplification or specialization have also produced some unintended and unwanted side effects among workers (e.g., Walker, 1950; Herzberg, Mausner, and Snyderman, 1959; Turner and Lawrence, 1965). These side effects are behavioral and economic in nature and include: job dissatisfaction, high absenteeism and turnover, and lower productivity (Porter and Steers, 1973; Macy and Mirvis, 1974; Mirvis and Macy, 1975). The nature and effects of these work-related outcomes--including job satisfaction--are important subjects for empirical research since the eighty million Americans who hold jobs, spend one-third or more of their waking hours at work, and for many their continued performance at work is an economic and psychological necessity.

It has only been recently that social scientists have attempted to gather rigorous empirical evidence on the outcomes of workers at

work, their relationships to individual differences, and the experienced characteristics of job or task structure.

Considerable evidence has been gathered through so-called job enrichment experiments which regard the industrial and public service environments and their workers as less complex and less interdependent than the data seem to suggest they are. Moreover, many of these programs of job enrichment, like the theories of Taylor (1911) and Roethlisberger and Dickson (1939), regard the individual as being motivated by a single variable. This study, opposing this single variable or job enrichment approach, views man as a complex organism.

As a result of these common job enrichment concepts, many organizational theoreticians have chosen to concentrate their theoretical and empirical efforts on the discovery of the various influences upon social man. To counteract this recent trend, Schein (1970) has commented:

- a. Man is not only complex, but also highly variable; he has many motives which are arranged in some sort of hierarchy of importance to him, but this hierarchy is subject to change from time to time and situation to situation; furthermore, motives interact and combine into complex patterns
- b. Man is capable of learning new motives through his organizational experiences, hence ultimately his pattern of motivation and the psychological contract which he establishes with the organization is the result of a complex interaction between initial needs and organizational experiences.
- c. Man's motives in different organizations or different subparts of the same organization may be different
- d. Man can become productively involved with organizations on the basis of many different kinds of motives

- e. Man can respond to many different kinds of managerial strategies depending on his own motives and abilities and the nature of the task. (p. 70)

It is this study's basic research theme that the motives and needs cited by Schein (i.e., individual differences) interact with one another (i.e., conditioning effect, moderator effect, etc.) resulting in a pattern variable or a combined variable. Therefore, a pattern variable, composed of facets of task structure and individual difference variables, combine to produce different outcome variables. In Mayo's Hawthorne experiments, it was assumed that man was motivated by social needs. So, too, job enrichment assumes man is or should be motivated by one social need--self actualization. Generally, job enrichment is defined as:

The process of allowing the individual worker to determine his own working pace (within limits); allowing the individual worker to serve as his own inspector by assigning responsibility for quality control to the worker; allowing the individual worker to repair his own mistakes; allowing latitude in the choice of methods; and allowing the worker to be responsible for his own machine set-up. (Hulin, 1971, p. 160-161)

To summarize, this stream of job enrichment literature indicates that people and workers are all alike and are motivated by one force.

Mackinney, Wernimont, and Galitz (1962) reviewed these job enrichment studies, which proposed a relationship between job specialization and job satisfaction, and concluded that the data did not present any clear picture. In their discussion of the differences among members in this regard they state:

The most compelling argument against specialization as a major cause of job dissatisfaction lies in the fact of

individual differences. This is the central fact of life in the behavior sciences, and yet the would-be reformers apparently believe that all people must react in exactly the same way to the same job. The observer says to himself, "That job would drive me nuts in half an hour." From this he somehow concludes that it must drive everyone else nuts as well. This simply is not so! (For that matter, it's highly probable that many of the workers interviewed by sympathetic social scientists privately regard their questioner's activities as a pretty terrible way to earn a living, too.) (p. 17)

This statement and the typically loose research procedures followed by some of these job enrichment advocates (Herman and Hulin, 1972) indicate why much of the theory about workers' jobs and their perceptions has pointed to self-actualization approaches and single work-motivated value systems, in spite of the fact that the data have not been clearly supportive of this position.

Specific Problem to be Investigated

Throughout the last forty years, behavioral scientists and managers have been theorizing about work, motivation, performance, etc. Within these various theories, task structure (referring to the previously discussed five experienced and intrinsic attributes of the job or task) has been identified as one of, if not the main set of variables (by various researchers, including Wanous, 1974; Hackman and Lawler, 1971; Pritchard and Peters, 1974; Dickson, 1974; Wyatt et al, 1937; Walker and Guest, 1952; and Turner and Lawrence, 1965) that cause certain outcomes. However, task structure is essentially an experienced phenomenon. Its correlations are the different stimuli and the different responses which occur within a particular unit of time. What will be varied and interesting to

one individual may be monotonous and uninteresting to another. Munsterberg (1913) made this distinction by seeking out what he considered to be the most monotonous job in a factory setting. During the period of watching many jobs and talking to the individuals concerned, he concluded that feelings of monotony depended more upon the individual than the type of work performed. Munsterberg described a woman packing light bulbs in a plant; although the job was described as monotonous and lacking skill variety, he discovered that the woman had found the work interesting and had in fact done it for fourteen years. The reason for her interest was that she had built a great deal of structure into her work by setting herself goals and targets for completion. Bills (1923) came to a similar conclusion indicating ways in which individual differences influence task structure.

In order to provide an understanding of the complex problem to be investigated in this study, a brief review of the two conflicting viewpoints (the assumptions of the job enrichment framework and the individual differences viewpoint) will be made at this point. Chapter II will provide in detail the specific and lengthy research evidence necessary to test these conflicting viewpoints.

Assumptions of the Job Enrichment Framework

In recent years, proponents of the job enrichment movement, like advocates of the human relations school which preceded it, have enthusiastically followed the prescriptive doctrine that all

jobs should be designed so that the job itself engages the interests, skills, and abilities of the worker, and brings him a sense of accomplishment which will result from completing a meaningful, challenging, and interesting job. Researchers such as Argyris (1957, 1962, 1964), Walker (1950), Herzberg (1966), McGregor (1960), Likert (1961, 1967), and Kornhauser (1965) all suggest that a world in which all jobs or tasks were enlarged would be psychologically more fulfilling. Generally, these theoreticians and many anecdotal accounts hold the following assumptions to be valid for all workers:

1. Low task structure (task repetitiveness, low autonomy, etc.) leads to monotony and, conversely, task uniqueness and diversity lead to a lack of monotony.
2. Task monotony leads to boredom and job dissatisfaction.
3. Boredom and job dissatisfaction are associated with the undesirable behavioral patterns of turnover, absenteeism, restriction of output, poor quality of work, theft, and drug abuse.

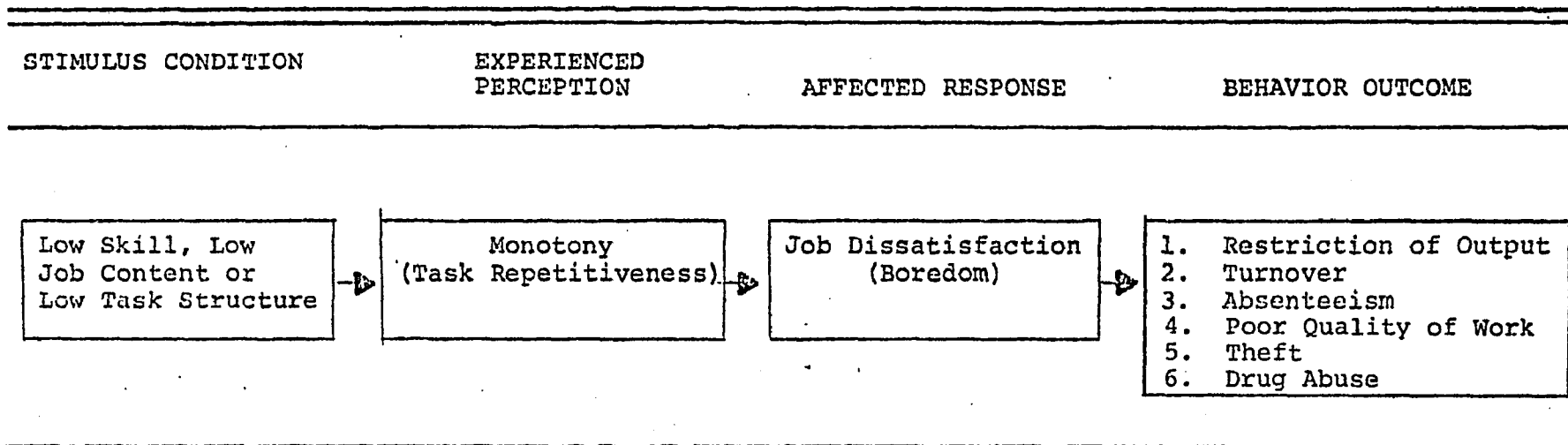
The first assumption holds that as tasks or jobs become increasingly specialized (i.e., less autonomous, less varied, less influential, etc.), the monotony (the worker's perception of the characteristics of his or her job) increases. The task repetitiveness, or short-time cycle of simplified tasks, is assumed to lead to monotony. Therefore, monotony is hypothesized to be associated with feelings of boredom and job dissatisfaction. Consequently, the affected responses of job dissatisfaction and boredom are predicted to lead to certain behavioral outcomes. These behavioral

outcomes are assumed to be turnover, absenteeism, restriction of productivity, poor quality of work, theft, and drug abuse. These job enrichment assumptions are diagrammed in Figure 2.

The above assumptions are presented in a more positive light in Figure 3. This figure presumably holds true for all members of the workforce. In other words, the more complex and challenging the task becomes, the more job satisfaction will increase. Furthermore, this figure illustrates the hypothesized positive and monotonic association between the dimensions or facets of task structure and job satisfaction. Even though the relationship may be linear, any one of several positive and monotonic functions could be substituted. This brings to the forefront the questions: Are there multiple functions for different subgroups of people performing multiple and varied tasks? Are these functions always positive and monotonic? Can too much autonomy, variety, etc. (very high task structure) be associated with job dissatisfaction?

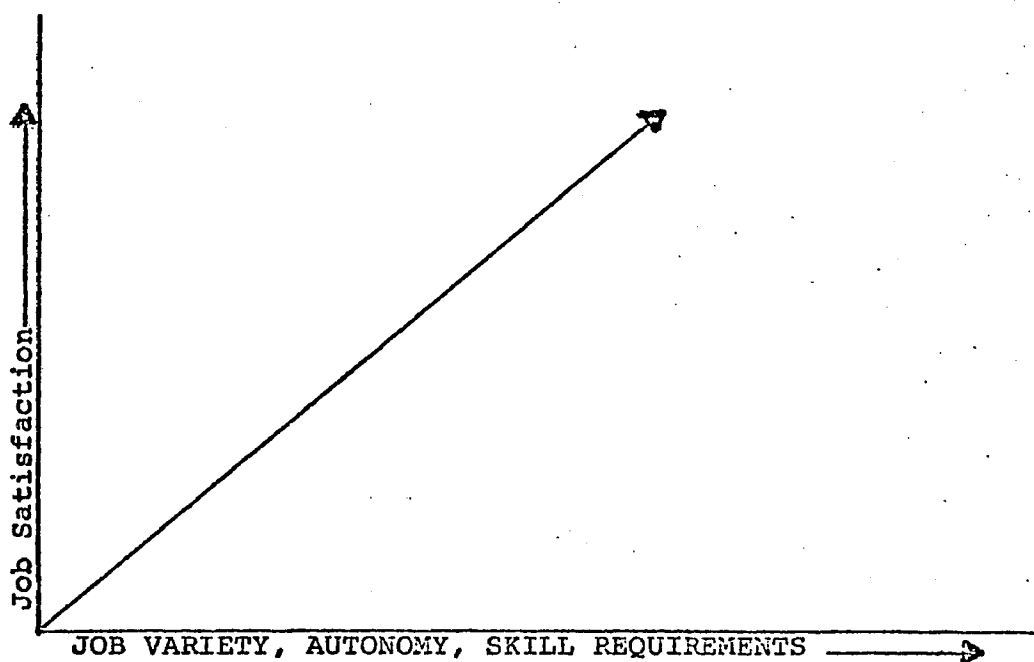
Also included in this depiction of task structure and job satisfaction is the assumption that as job variety and job satisfaction increase, the intrinsic motivation of the worker will show a corresponding increase. In recent years, there has been considerable empirical evidence indicating that individuals vary in their willingness to accept monotony. Moreover, evidence seems to indicate that some workers may be positively motivated by repetitive jobs (Smith, 1955; Smith and Lem, 1955; Baldamus, 1961; and Filley and House, 1969).

FIGURE 2: THE TRADITIONAL JOB ENRICHMENT MODEL



SOURCE: (Modified from C. Hulin and M. Blood, "Job Enrichment, Individual Difference, and Worker Responses", Psychological Bulletin, Vol. 69, No. 1, 1968, p. 211).

Figure 3: Hypothesized General
Relationship Between Job
Variety and Job Satisfaction



SOURCE: (From C. L. Hulin, "Individual Differences and Job Enrichment--The Case Against General Treatments," in New Perspectives In Job Enlargement, (ed.) by J. R. Maher, New York: Van Nostrand Reinhold Company, 1971, p. 163).

This reported linear relationship between task structure and job satisfaction has been subject to considerable criticism from Brayfield and Crockett (1955), Schwab and Cummings (1970), Stogdill (1972), and many others. Most recently, Ash (1973) challenged the controversial Health, Education and Welfare's (HEW) Work In America (1972), which is based on the above job enrichment assumptions. Ash's criticisms concerned "...the adequacy of the data for its recommendations and the validity of its underlying assumptions" (p. 600). Other theorists (Scott and Mitchell, 1972) suggest that the relationship between task structure and job satisfaction may be curvilinear, as represented in Figure 4.

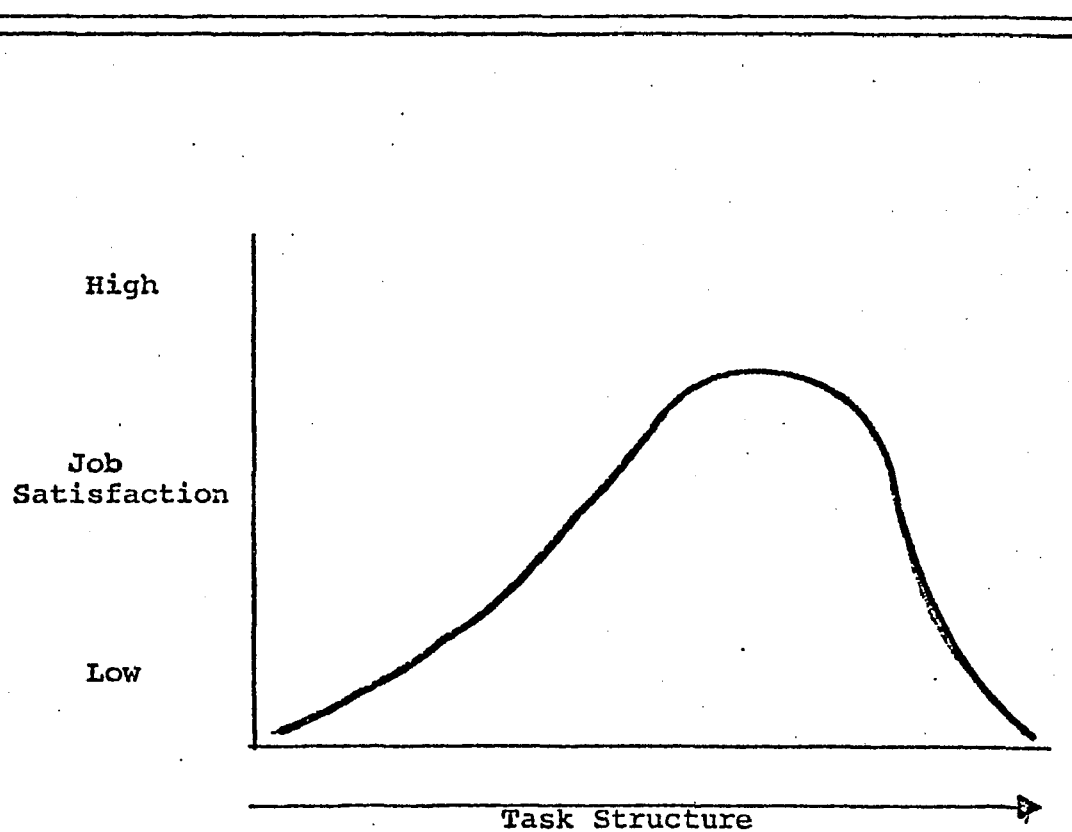
Scott and Mitchell indicate:

When the job is neither specialized nor standard, an employee would have difficulty knowing what or how to do his job. At the other extreme are situations which are highly repetitive and boring. Although these points may differ for different types of people or jobs, it is clear that the extreme ends of these continuums are related to low morale. (1972, p. 107)

In summary, the first assumption of the job enrichment school when considered in light of other theory seems at best questionable. Chapter II presents in detail the specific empirical evidence upon which this opposing theory is based.

The second assumption, that monotony leads to boredom and job dissatisfaction, although closely related to the first, is the assumed affected response (Figure 2) from the worker's perception of his job's characteristics. This assumption is dependent upon the additivity and validity of the stimulus condition and the experienced perception of the first job enrichment assumption dis-

Figure 4: Hypothesized Curvilinear
Relationship Between Task
Structure and Satisfaction



SOURCE: (Modified from W. G. Scott and T. R. Mitchell,
Organization Theory, Homewood, Ill.: Richard D.
Irwir, Inc., 1972, p. 107).

cussed above. But, for a moment, let us assume that this assumption is valid. If this is true, can we also assume that all workers will respond negatively to this experienced perception? Is it not possible that some workers prefer less challenging and less responsible tasks? In 1960, Vroom, in his book Some Personality Determinants of the Affects of Participation, indicated that not all workers are satisfied when they take part in the decision-making that is the result of more challenging tasks and more responsibility. Vroom indicates there are significant individual differences between workers who perceive the opportunity to make decisions about their jobs positively and those individuals who do not. Vroom's empirical data, like those of Smith (1955), Smith and Lem (1955), and Baldamus (1961) highlight the possibility that some workers may prefer routine, repetitive, and specific work methods.

In summary, there seems to be conflicting theory and evidence that makes suspect the hypothesis that monotony leads to boredom and job dissatisfaction. Chapter II presents the specific basis for this opposing theory.

The third assumption, that boredom and job dissatisfaction are associated with various undesirable behaviors, is the behavioral outcome shown in Figure 2 and proceeds from the additive relationship of the two prior assumptions. These behaviors are assumed to be turnover, absenteeism, lower productivity, poor quality of work, theft, drug abuse, etc. However, only for two of these behaviors, turnover (measured in this study as propensity to leave the organi-

zation) and absenteeism (not measured because of historical time requirements), is there enough theoretical and empirical evidence to substantiate that in certain situations an individual's job satisfaction is significantly related to his or her decision to quit or be absent (Wertz, 1956; Vroom, 1964; Hulin, 1966, 1968; Lawler, 1970, 1973; Porter and Steers, 1973; Porter et al., 1974; and Newman, 1974).

The above three job enrichment assumptions may be summarized as follows:

1. Hard work is a virtue and work confers upon the worker a sense of his identity, place in the world, status, order in life, and reason for being (i.e., the Protestant Work Ethic).
2. Work is central to the lives of all people.
3. On-the-job work values, norms, etc. are transferred to off-the-job activities.
4. All workers desire to achieve self-actualization in their tasks.
5. There is a rising tide of discontent (job dissatisfaction) among workers.
6. All workers want tasks that are intrinsically meaningful (i.e., high task structure) and
7. Job redesign can be applicable to all jobs and all people because it makes work meaningful.

The relationship between restriction of output or productivity and job satisfaction has been almost nonexistent (see Brayfield

to find the assumed hypothetical relationships between task structure and job satisfaction:

1. Failure to account for individual differences (Hulin and Blood; MacKinney et al., 1962, Locke, 1970);
2. The relationship is complex and requires the use of moderator variables (Schwab and Cummings, 1970);
3. Theory and literature are highly value-laden (Filley and House, 1969);
4. Research has been far from rigorous (Hulin and Blood, 1968; Filley and House, 1969; Herman and Hulin, 1972);
and
5. Findings stem from unclear data with which job enrichment advocates allow themselves interpretive freedom (Filley and House, 1969).

In view of the questionable job enrichment hypotheses, it might be beneficial to provide a brief review of an alternative to the assumption that all people respond the same way to the same stimulus.

An Alternative Approach: The Individual Differences Viewpoint

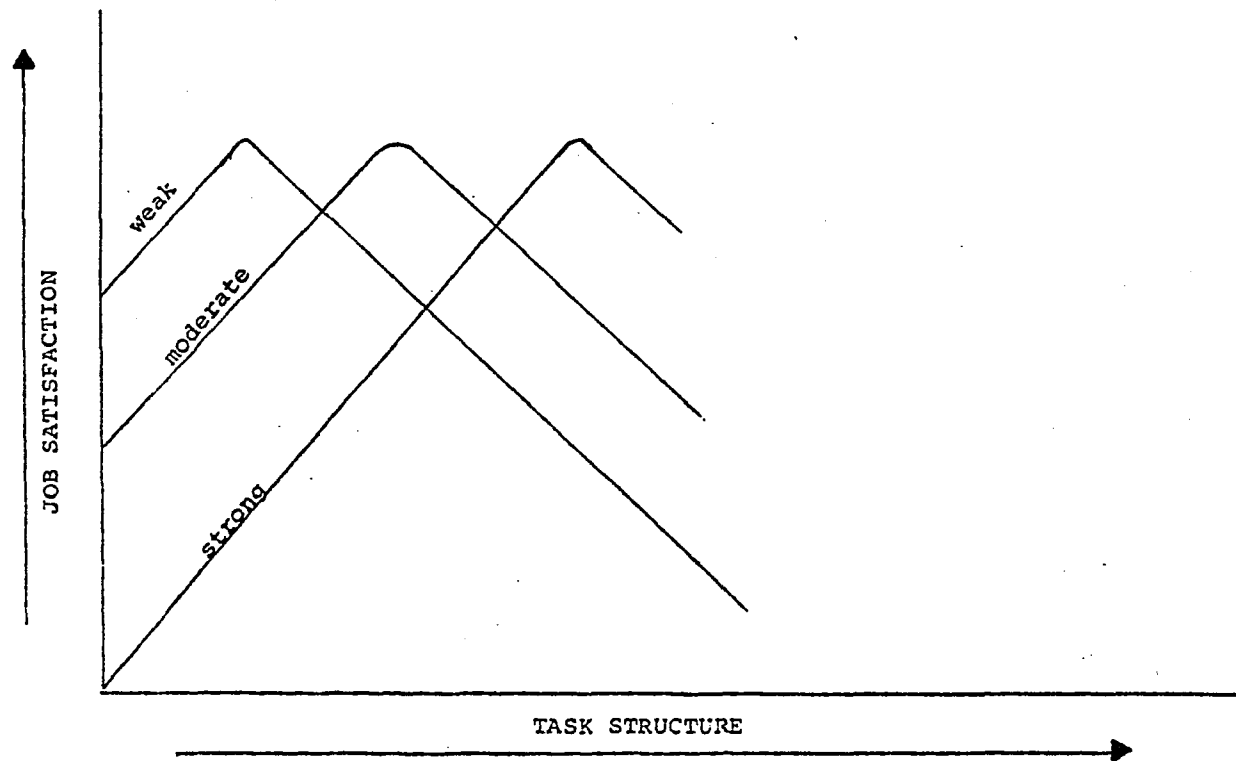
The alternative viewpoint proposed here is based on the individual differences position described by Hulin and Blood (1968) and Hulin (1971) in two papers stating the case against general treatment of workers by job enrichment enthusiasts. Some or all of the above assumptions are invalid for some or all members of the workforce; the assumptions hold true only in certain circum-

stances and to certain degrees. In other words, subgroups of the workforce may be identified whose motivation to work (defining work as those activities performed for pay, Dunnette, 1973) does not follow the job enrichment principles mentioned earlier. No value judgment is attached to individual difference variables (self-esteem, internal-external life orientation, etc., defined elsewhere in this study) for these subgroups of workers. It is assumed that the interaction of these individual difference variables creates a pattern variable, which moderates the association between task structure and certain outcome variables. These outcome variables are three facets of satisfaction and the perceived propensity to leave the organization.

This new list of counter-assumptions leads to the rejection of specific assumptions inherent in the job enrichment model. Specifically, the positive and monotonic linear relationship shown in Figure 3, which is assumed to be true for all workers, would be viewed as only one of a number of different possible relationships between task structure and job satisfaction. Hulin (1971) indicates that we should be willing to consider a multiple family of curves or functions (some weak, some moderate, and some strong) relating to task structure and job satisfaction. He indicates three sets of curves (Figure 5), with the most satisfying amount of task structure at different points for different subsets of workers, according to individual desires and differences.

The general conclusion one derives from Figure 5 is that there is a positive relationship between task structure and job satis-

FIGURE 5: ALTERNATE HYPOTHESIS -- ALLOWING FOR INDIVIDUAL DIFFERENCES - RELATIONSHIPS BETWEEN TASK STRUCTURE AND JOB SATISFACTION FOR DIFFERENT GROUPS OF PEOPLE WITH VARYING DEGREES OF DESIRES FOR DEMANDING JOBS



SOURCE: (Modified from C. Hulin, "Individual Differences and Job Enrichment--The Case Against General Treatments", in New Perspectives In Job Enrichment, (ed.) by J. R. Maher, New York: Van Nostrand Reinhold Company, 1971, p. 166-167).

faction, but it must not be assumed to be the same for all. Rather, it is dependent to a great extent on the individual differences of workers.

Hulin reports this alternative viewpoint as stated below:

There exist identifiable subgroups of workers within the American workforce whose motivations are predictably and lawfully different from the general work motivation assumed by the job enrichment proponents. The problem confronting the researcher, then, is one of determining and assessing those variables which differentiate between these various subgroups, rather than assuming we understand work and what motivates men. The next step must be to determine the characteristics of the job and work situation which serve as positive sources of motivation for these different, independently defined work groups. Finally, if we discover that substantial differences exist between workers and that certain groups of workers are positively motivated by money or even a repetitive job, then such differences must simply be regarded as part of the description of the world as it exists. (1971, pp. 165 and 167)

Furthermore, Figure 5 makes the stated job enrichment assumptions and principles suspect by indicating that the relationship of job satisfaction to task structure is curvilinear. However, this curvilinear relationship is also related to other kinds of moderating variables--namely, individual differences.

Hulin and his associates have identified the research trail, but they have not established, determined, or assessed those variables which differentiate between workers. Nor have they determined the experienced characteristics of task structure and their empirical relationships to satisfaction.

Turner and Lawrence (1965), Hackman and Lawler (1971), and more recently Wanous (1974), have proceeded beyond the research trail identified by Hulin and others and have empirically investi-

gated those variables which differentiate workers from one another. Moreover, they have indicated that there are certain moderators of employee reactions to task structure or job characteristics. Wanous, like Hackman and Lawler, found that higher order need strength (using a median split to separate responses into high or low "higher order need strength" groups) was the best and the most significant of three individual difference measures. The other two measures were Blood's "pro-Protestant Ethic" and Hackman and Lawler's measure of "location of socialization."

The next sections of this chapter define the conceptual model to be used in the empirical test of the hypothesis that individual differences act to moderate the relationship between task structure and certain outcome variables.

Against the background of the two opposing viewpoints concerning task structure, individual differences, and outcomes, the following three propositions will be empirically investigated:

- Proposition I One or more of the individual difference variables will moderate the relationship between task structure and the facet satisfactions.
- Proposition II Holding the individual difference variables constant, task structure will be positively associated with one or more of the facet satisfactions.
- Proposition III Holding the individual difference variables constant, task structure will be negatively associated with propensity to leave the organization.

This study attempts to test the main hypotheses that individuals faced with a common task and environment perceive these differently.

and that these differences in perceptions are influenced by particular dimensions of an individual's personality. The other hypotheses are logical theory-based derivatives of the conceptual model which will be presented in Chapter II.

The various null hypotheses and the associated specific hypotheses with each will be presented in Chapter III.

Importance of the Individual Differences Approach as Moderators Between Task Structure and Outcomes

Much of the current theory about organizational functioning² alludes to, but deals only summarily with, the effects of different modalities of individual personalities on outcomes in organizations. Specifically, there has been little attempt to determine empirically whether particular attributes of an individual's personality have significant effects on the relationship of the individual to organizations and, therefore, on his or her behavior in organizational settings.

Organizational theoreticians, managers, and job enrichment advocates have (or should have) a vested interest in this study as it attempts to explain and predict how the five facets of task structure influence the three facets of satisfaction and propensity to leave the organization. Hopefully, with the variance from the two samples and its corresponding large N including many individuals at various job levels, this study's findings will be sufficiently

²Expectancy theory does allow for individual differences, but does not deal with them in sufficient detail.

generalizable to provide additional knowledge of task structure's impact upon the three facets of satisfaction and propensity to leave the organization. Moreover, this study's combination of task structure and individual difference measures--the same general sets of variables alluded to in various motivational models--will lead to further research on the interactional nature of the relationships between satisfaction and performance or performance leading to satisfaction.

In addition, if the study's hypothesis concerning the interactional relationship of individual differences and task structure is confirmed, then the finding that the outcomes are a function of this interaction will have significant impact upon those interested in applying behavioral science knowledge to the practical problems involved in job redesign: job redesign advocates will have to take into account differences among the very individuals they are trying to change.

Approach and Conceptualization

The concept upon which this study is based is that there are basic aspects of an individual's personality that significantly affect the way he or she perceives his or her task structure or environment, and that this interaction pattern causes certain outcomes.

The various dimensions of the conceptual model, their definitions, operationalizations, and interrelationships are detailed in Chapter II. This research is an attempt to test the hypothesis that people perceive things differently based upon their individual differences.

It is proposed that individual differences will moderate the relationship between task structure and certain outcomes. With the foregoing framework in mind, the following research questions were formulated: (1) Do individuals who differ in certain personality measures differ in their responses to task structure and outcome measures? (2) If individual differences are held constant, do individuals differ in certain outcome measures as a function of task structure?

The research is based on moderator analysis (Saunders, 1956; Ghiselli, 1963; Zedeck et al., 1971; Zedeck, 1971; Abrahams and Alf, 1972; and Dunnette, 1972) in combination with Multiple Classification Analysis (MCA) developed by Andrews, Morgan, and Sonquist (1967) and Andrews et al. (1973). Generally, this approach is a "moderator approach to prediction" and uses some variable(s) as moderators to investigate possible interactions. A special feature of the MCA program can be used to determine the extent of specified interactions. Where appropriate, partial correlational analyses will be performed holding certain moderators constant.

Research Objectives

The general objective of this research is to examine the relationships or interactions of individual differences acting as moderators upon the five facets of task structure and the indicated outcome variables. In addition, this empirical field study will consider the relationship between the different facets of task structure, and the outcome variables of satisfaction and propensity

to leave the organization, holding individual differences constant. In other words, this field research will be a partial test of the "general treatment" assumptions which hold that there exists a positive relationship between high task structure and high satisfaction for all people. This study postulates that these assumptions are only true in varying degrees for certain identifiable workgroups, this interrelationship depends to a great extent on the individual differences of workers.

There were three specific research objectives. The first was to develop items, report internal reliabilities, and factor findings and loadings for each scale in an operational questionnaire that measures the indicated independent, moderator, and dependent variables. This necessitated pretesting a sample questionnaire over large industrial and public sector populations or utilizing other reliable measurement scales.

The second research objective was to measure the interaction of a structural variable--task structure--and some psychologically-determined personality measures against their relationships to some outcome variables. This was done to determine whether or not personality measures alter or moderate the relationship between certain independent and dependent variables.

The third research objective was to determine the relationships between task structure effects upon specified outcome variables when individual differences are held constant.

Organization of the Study

Chapter II describes the detailed conceptual-interactional model, its dimensions, operationalization, and definitions. A detailed discussion of the concepts of task structure and the individual difference measures precede a discussion of the outcome variables. The theoretical considerations and empirical evidence from which the research objectives have been derived are included in Chapter II.

Research design statement of the general propositions and their specific hypotheses are the subject of Chapter III. Included in this chapter are the following topics: statement of research hypotheses; design and construction of the questionnaire; sample sizes and characteristics; field study methodology; and limitations and assumptions underlying the field study.

In Chapter IV, the measurement of internal reliabilities, factor analysis results and correlational matrices by scale are presented. Included within this chapter is the prior evidence of independence, scale reliabilities, etc. of the independent, moderator, and dependent variables.

In Chapter V, the analysis and discussion of the data are presented for each hypothesis. The specific statistical tests used to test each hypothesis are also discussed.

Chapter VI summarizes the findings of the study. The possible extent of generalizations, future directions, and recommendations are included in this final chapter.

CHAPTER II

SUPPORTING THEORY AND EMPIRICAL EVIDENCE

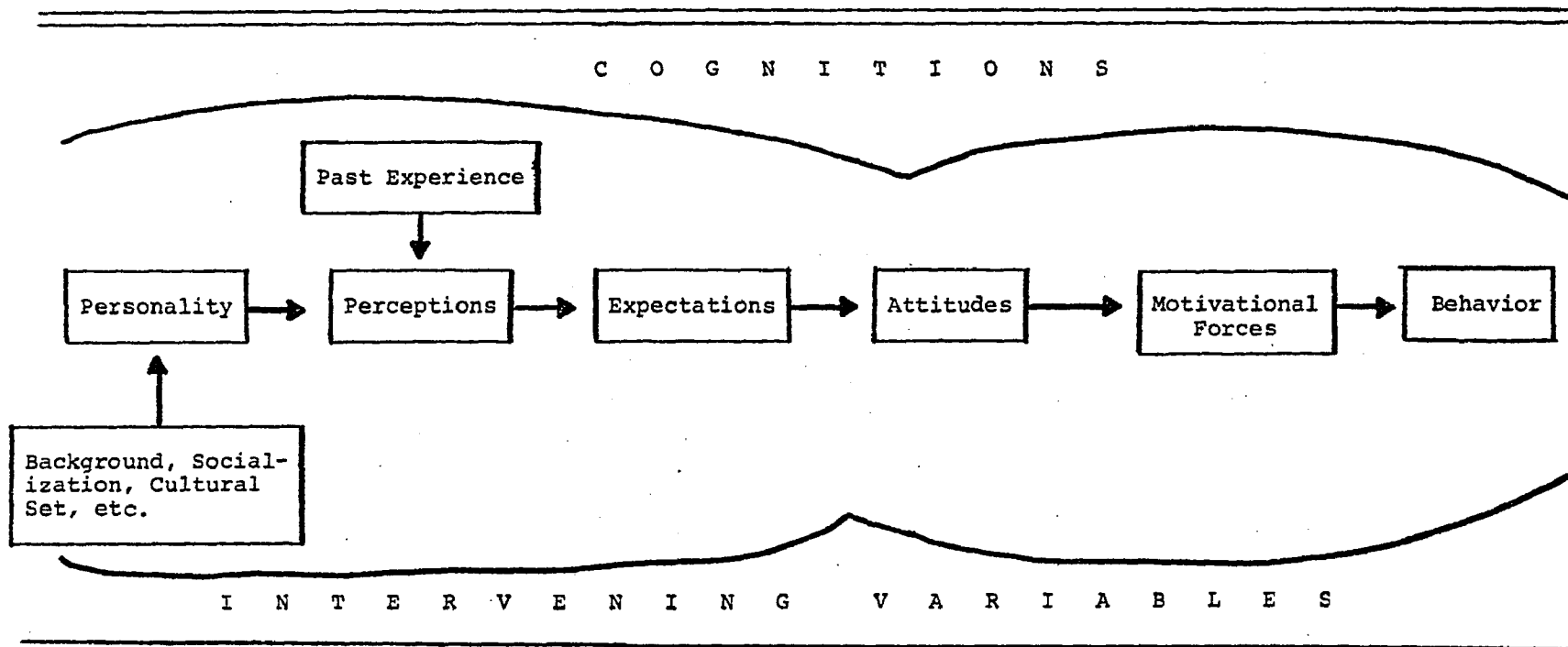
Introduction

Recent theoreticians (Hulin and Blood, 1968; Hulin, 1971; Hackman and Lawler, 1971; and Wanous, 1974) have indicated that the study's five independent and seven moderator perceptual variables (i.e., task structure facets and individual differences) are some of the basic factors influencing satisfaction and performance. Likert (1961) has indicated that the member's reaction to the stimuli always depends upon the stimuli as "perceived" by the member and the expectations, values, and interpersonal skills of the member. Likert states this generalization to be "valid for every level in a hierarchical organization and for all kinds of organizations: industrial, governmental, military and voluntary" (1961, p. 95). Likert's position, like the position of this research, is consistent with Lewin's (1935, 1951) theories of force-field and personality which strongly demonstrated the vast importance of intervening variables and interaction or moderator effects.

Likert (1961) describes Lewin's influence upon his own research as shown in Figure 6. This cognitive model, demonstrating the influences of intervening variables or moderators, indicates that the responses from a member to task structure depend upon:

1. The perception by the member (i.e., how the member sees, interprets, and experiences the stimuli).

Figure 6 : Association Between Likert's and Lewin's
Intervening Variables and Outcomes



SOURCE: (Modified from R. Likert, New Patterns of Management, McGraw-Hill Book Company, Inc., 1961, p. 197.)

2. The relationship between these perceptions and the various expectations, and interpersonal skills of the member (i.e., the personality or individual difference variable).
3. The member's culture, past experience, socialization, background, values, etc.

Measurement of these intervening or moderator variables can be of great assistance to understanding and predicting behavior. Such measurement can reveal that expectations, values, beliefs, and perceptions of the organizational member are of critical importance in organizational theory. Likert's integrating theory summarizes this perceptual approach as follows:

...an individual's reaction to any situation is always a function not of the absolute character of the interaction, but perception of it. Consequently, an individual member of an organization will always interpret an interaction between himself and the organization in terms of his background and culture, his experience and expectations. (1961, p. 102)

Therefore, for empirical research purposes, the use of perceptual measures is acceptable (Sims and Szilagyi, 1974; Porter and Lawler, 1968).

The Conceptual Model

Since the early 1900's, theoreticians and field psychologists have been investigating the interaction between work and workers. Munsterberger's (1913) research was the initial psychological work concerning work and behavior outcomes. However, Munsterberger's work, like that of other psychologists from 1910 to the 1930's,

primarily focused upon the various techniques of personnel selection and placements, and upon certain physical aspects of the work environment. During the late 1930's, interest was shown in studies of employee attitudes and their relationships to outcome behaviors. The Hawthorne Studies (Roethlisberger and Dickson, 1939) provided the impetus for studying workers and their relationships to the working environment. At about this same time, Lewin, Lippit, and White (1939), and Coch and French (1948) emphasized the critical importance of studying member's attitudes and feelings about their work situation. So, by the late 1940's, it had become scientific practice to study concepts and variables like satisfaction and the importance of job structure to the worker.

The investigation of workers, their attitudes, and the work environment became commonplace in the mid-fifties and early 1960's. Vroom (1964) reviewed twenty correlational studies of job satisfaction and job performance and found a median correlation of .14 which had little theoretical significance. Herzberg et al.'s (1957) review of the same studies rendered the opposite conclusion. Vroom (1964) indicates:

1. There is no single relationship between job satisfaction and job performance.
2. There is a consistent negative relationship between job satisfaction and the probability of resignation.
3. . . .it is sufficient that the lack of any marked association between the two variables (job satisfaction and job performance) suggests the desirability of regarding them as both conceptually and empirically separable outcomes of the person-work role relationship. (pp. 186-187)

Since Vroom's research, it has been customary to investigate worker attitudes in relation to satisfaction, supervision, influence in decision-making (i.e., upward influence), the work group, interactions between independent, moderator, and dependent variables, task structure, individual differences, specialization, control of work methods and work place, skills and abilities, success and failure in work performance, wages, interruption of work, and demographic variables (Vroom, 1964, pp. 99-173). Vroom (1964) emphasizes the limitations of theoretical and empirical statements on work characteristics and worker responses:

The investigations considered in this section have been relevant to a determination of the effect of social relationships between members of the same work group on their attitudes or satisfaction. There has been virtually no consideration given to the role of individual differences in this relationship. The probability that individual personality and work group characteristics may interact in the determination of affective orientations toward the group or the group setting has not been explored in existing research on this topic. (p. 126)

There are significant theoretical reasons that individual differences (i.e., internal-external life orientation; self-esteem; the three facets of willingness to accept bureaucracy; need for achievement and need for affiliation) might be extremely important. For example, Cartwright and Zander (1960, p. 72) attach importance to:

1. Such properties of the group as its goals, programs, size, type of organization and position in the community; and
2. The needs of the person for affiliation, recognition, security, and other things . . .

Because the investigation of attitudes is so closely related to the study of motivation and motivation theory, researchers can draw upon a considerable body of psychological theory to build an interactional model which emphasizes task structure and individual differences.

It seems in both social and organizational psychology there has been a general reluctance to deal with individual differences and structural or environmental variables simultaneously. The result is that, while there is much known about the separate effects of the two types of variables (i.e., individual differences and a structural variable--task structure), there is little or no knowledge about the nature of their interaction. However, the need for this type of interactional research has been widely recognized for some time. Katz (1955) discussed the significance of this problem for social psychology:

In other words, 'we have perpetuated the old dichotomy of approaches: either all individuals are affected similarly by group conditions or all group effects are explained as the expression of personality mechanisms. If social psychology has any unique subject matter, it may well be in this neglected area of the interaction effects of personality and social settings. (p. 352)

Cronbach (1957) came to a similar conclusion in a presidential address before the American Psychological Association:

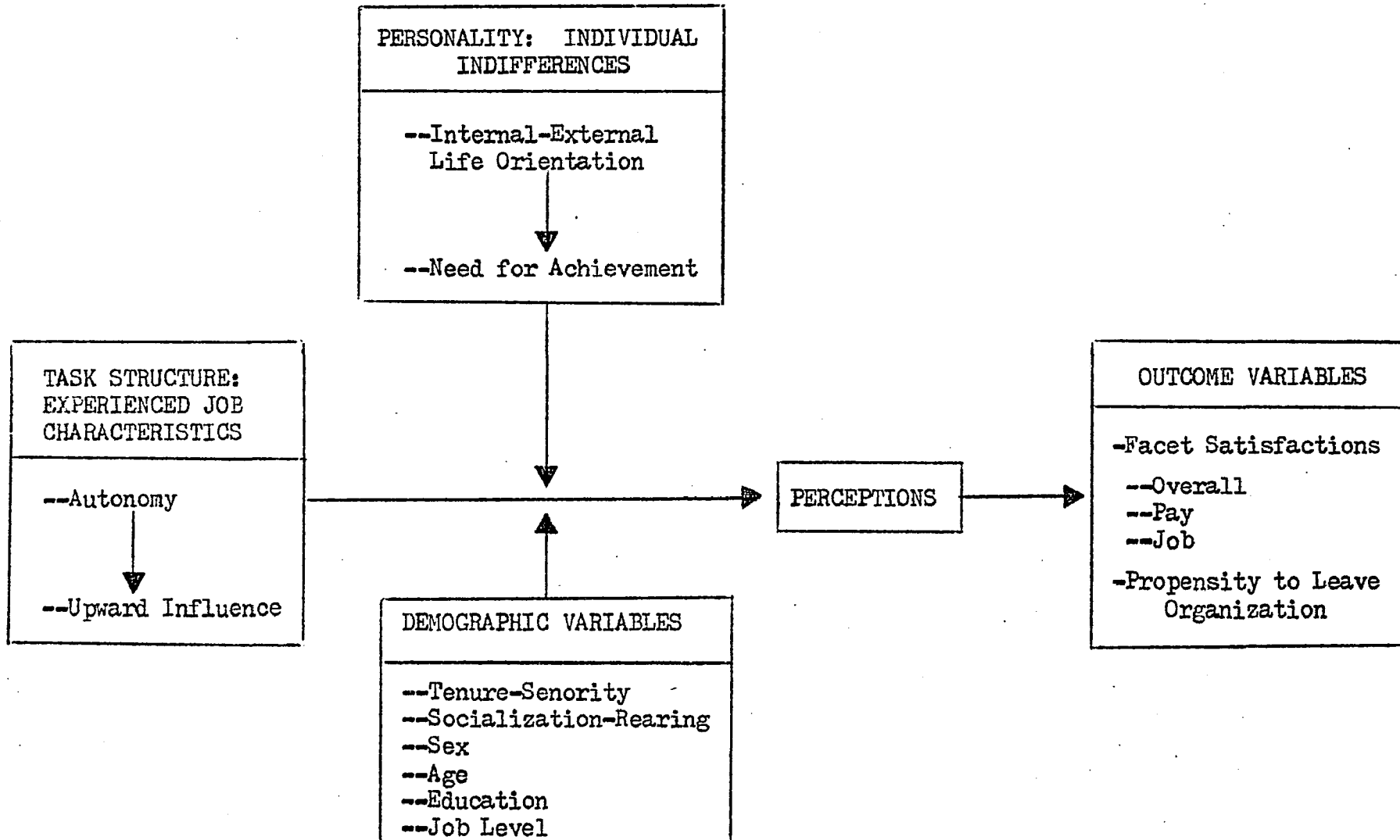
In both applied work and general scientific work, psychology requires combined, not parallel, labors from our two historical disciplines. In this common labor, they will almost certainly become one, with a common theory, a common method, and common recommendations for social betterment. In the search for interactions we will invest new treatment dimensions and discover new dimensions of the organism. We will come to realize that organism and treatment are an inseparable pair and that no psychologist can dismiss one or the other as error variance. (p. 683)

This study deals with individual differences and structural variables (i.e., task structure) simultaneously to test the nature of their interaction. The conceptual-interactional model is indicated in Diagram I on the following page. As Diagram I indicates, the individual difference variables mediate the relationship of task structure and the outcome variables. Furthermore, this interaction between task structure and the personality characteristics influences different outcomes stemming from different perceptual states.

Dimensions of the Conceptual Model

In recent years, organizational research findings have been dependent upon the conceptual strategy and the methodology employed (Herman and Hulin, 1972; Katz and Kahn, 1966). Generally, the conceptual framework has been based upon two research approaches: (1) investigating objective or organizational variables or characteristics across many organizations; and (2) investigating individual differences within a single organizational setting. Historically, researchers have studied attitudes and behaviors of organizational members through an individual differences model, while the objective approach seems to be more concerned with developing the "ideal" taxonomy identifying different categories of variables according to different types of organizations. Usually, the latter approach conceptualizes a framework devoid of organizational members; the former approach looks at members separate and apart from the organization. However, certain theoreticians, in contrast to the above-cited strategies, emphasize that the combined study of the differences between individual workers and the objective characteristics of the

DIAGRAM I: CONCEPTUAL INTERACTIONAL MODEL



organization is the most relevant empirical research methodology. These theoreticians (March and Simon, 1958; Likert, 1961; and Katz and Kahn, 1966) emphasize that research paradigms cannot make valid predictions within a complex and dynamic organizational situation without considering organizational and task structure, differences between individual workers, and the interactions between individual workers and their organizations.

The problem to be considered in this empirical field research is: "How can we best describe workers so that our descriptions will help us predict their behaviors?". Descriptions in terms of certain personality variables and member perceptions concerning the task structure as experienced by the worker are of particular interest in this investigation. Can certain variables related to workers' personalities or reactions to work situations be used to order or subgroup workers, thereby facilitating different predictions about outcomes?

Variables in the Conceptual-Interactional Model

Task Structure

This variable refers to five intrinsic task attributes experienced by the organizational member. These five experienced task structure facets influence his perceptual responses. The facets of task structure under consideration are such internal job characteristics as the amount of autonomy, required skill variety, task feedback and identity, and upward influence built into the job. These are not thought to be the only determinants of a worker's responses to his or her work situation. It is noteworthy, however, that only

Turner and Lawrence (1965), Hackman and Lawler (1971), and Wanous (1974) have investigated the relationship of various task structures, outcome variables and individual differences. Turner and Lawrence's Requisite Task Attribute (RTA) Index, a linear combination of six separately measured job characteristics, was used in determining the association between task structure and worker satisfaction and attendance. Turner and Lawrence obtained different reactions to high task structure due to substantial moderation by differences in the cultural backgrounds of employees. Blood and Hulin (1967) and Hulin and Blood (1968) supported Turner and Lawrence's findings by providing additional data and theoretical constructs on the relevancy of subcultural factors (i.e., plant location and socialization) to determine the responses of workers to the internal design of their jobs. These three studies emphasize the social and cultural aspects of workers and their jobs, but did not substantiate the reliability of specific scales or variables for measuring individual differences. Moreover, they failed to measure the characteristics of the task adequately. An improvement was made when Hackman and Lawler used subsets of the Turner and Lawrence RAT Index and scientifically measured individual need satisfaction and strength as opposed to individual differences or personality variables.

Hackman and Lawler used subsets of Maslow's (1954) need hierarchy to determine individual reactions to different tasks. Wanous (1974) also used Maslow's need hierarchy scale. These researchers did not use established or empirically validated personality measures. As prior research has found, the need hierarchy as developed by

Maslow is suspect; consequently, the development of items that have the necessary internal reliability and validity is imperative to moderator research.

The way a worker responds to his task may be dependent not only upon task structure, but also upon the organization's technology; organizational structure; supervisory behavior; economic, social, and environmental conditions; policies and practices; and individual's needs, values, beliefs, etc. The possible combinations and interactions from such a list are, of course, numerous; therefore, certain sets of variables have been extracted for study.

The person-machine-task relationship indicated by "task structure" is composed of the following five measures:

1. Autonomy--the degree to which the job provides freedom, independence, and discretion to the employee in scheduling his work and in determining the the procedures to be used in carrying it out.
2. Skill Variety--the degree to which a job requires a variety of different activities and skills to carry out the work.
3. Task Feedback--the degree to which carrying out the work results in the employee obtaining information about the effectiveness of his performance.
4. Task Identity--the degree to which the job requires the completion of a "whole" and identifiable piece of work from beginning to end.

5. Upward Influence--the degree to which the job provides the employee control and influence within the work setting.

In Diagram I, the five facets of task structure combine (i.e., interactively) with the demographic variables and individual differences to affect the four dependent variables. It is not the objective nature of task structure which influences or affects members attitudes, but rather it is the way they are experienced by the members. In other words, the degree of autonomy, skill variety, etc. a worker actually possesses in his or her job is not important; it is the degree or amount he perceives that he has which determines his responses to the task (Hackman and Oldham, 1974). The objective characteristics of a job do affect the member's perceptions and experiences. To emphasize this distinction Hackman and Lawler (1971) indicate:

. . .there are often substantial differences between objective job characteristics and how they are perceived by employees, and it is dangerous to assume that simply because the objective characteristics of the job have been measured (or changed) that the way that job is experienced by employees has been dealt with as well. (pp. 264-265)

The intent of the task structure measures used here (see the variable listing, Exhibit B, for specific items) is to determine perceptual, rather than attitudinal or other types of responses. The experienced task elicits a "stimulus-complex" (Thibaut and Kelley, 1959, p. 150) which is objectively internal to the individual. Task structure refers to a complex set of stimulus conditions which prompt the individual to perform certain processes in order to obtain

certain outcomes. Operationally, the task structure measures stimulate, or are intended to stimulate, the member to express his or her perceptions of the job in terms of these facets; the purpose is not to determine whether he or she likes them or not. Thus, the five task structure measures are designed to describe the perceptions of the job itself whereas the three satisfaction measures (see the variable listing, Exhibit B) evaluate them in terms of the degree of satisfaction derived.

To summarize, it is contended that the attributes or characteristics of tasks can elicit conditions (if we hold individual differences constant) which will enhance the satisfaction of workers. The specific findings to support this contention are provided later in Chapter II. Specifically, a model based on those Turner and Lawrence (1965), Hackman and Lawler (1971), and Wanous (1974) with the addition of upward influence, explains an individual's ability to obtain satisfaction from tasks which he or she experiences as high on the measures of task structure. The higher the task structure ratings, the higher the satisfaction.

Individual Differences

This portion of the model hypothesizes that the interaction between one or more of these variables will moderate the relationship between task structure and the specific outcome variables. The following seven moderators (see variable listing, Exhibit B, for specific items), according to their specific definitions, have been shown by prior research to influence certain outcomes:

1. Internal-External Life Orientation--the degree to which individuals have different concepts of a particular role because they themselves may differ from each other in their own self-conceptions, their social class identifications, occupational specialization and experiences, and the positions they occupy.
2. Self-Esteem--the degree of an individual's self-confidence or self-deprecation.
3. Willingness to Accept a Bureaucratic Orientation--the degree of bureaucracy defined as hierarchy of authority, division of labor, and rules for incumbents, the worker is willing to accept, divided into these three facets:
 - a. Hierarchy of Authority--the degree to which an individual willingly accepts a rigid separation of legitimate power within the organization;
 - b. Division of Labor--the degree to which an individual willingly accepts task specialization and departmentalization; and
 - c. Rules for Incumbents--the degree to which an individual willingly accepts a rigid set of rules and penalties regarding his work conduct.
4. Need for Achievement--the degree to which an individual has goals, strives to accomplish tasks as quickly as possible, attempts to exert his or her best efforts.

5. Need for Affiliation--the degree to which individuals desire to be with other people even if they are strangers; the desire to share common opinions with others.

Demographic Variables

Demographic characteristics are also viewed as moderator variables. According to Diagram I, the following heredity, economic, and socially determined variables interact with task structure and the specified individual differences to affect various outcomes:

1. Company Tenure (Seniority)--the number of years a member has worked for a company or organization.
2. Socialization-Rearing--the geographic location where the individual was reared up to age 14.
3. Sex--whether an individual is male or female.
4. Age--a worker's chronological age.
5. Education--the last year of formal education completed.
6. Wage Classification-Job Level--the specific hourly, supervisory, managerial, or clerical wage classification.

Previous empirical findings (Herman and Hulin, 1972; Herman *et al.*, 1975) have indicated that some of these demographic variables are either positively or negatively associated with the outcomes variables. Consequently, they are classified as demographic variables; however, these are operationally utilized as moderators, even though they can be thought of as either intervening moderator variables.

Perception

The individual member's perception of the work organization is the variable which determines outcomes. As defined earlier, perceptions are an individual's beliefs, preferences, and values. They are best measured by a self-report from the individual (Porter and Lawler, 1968, p. 25). This study will measure an individual's perception of his job by means of a self-report questionnaire (Exhibit A) whose purpose is to gather and quantify information on an individual's perceptions. The construction and internal scale reliabilities are discussed at length in Chapter IV. The way an individual experiences the five facets of task structure and perceives his needs, wants, and values as measured by the indicated personality scales are of the utmost importance to this research.

The final variable in the conceptual model--outcomes--is viewed as a product of the independent and moderator variables stemming from perceptions.

Outcomes

Outcomes are derivative variables. Operationally, these are used as dependent variables and take the form of three facets of satisfaction and the propensity to leave the organization. The interactional model in Diagram I indicates these outcome variables are affected by the interactional relationship of the five task structure facets, the demographic variables, and the seven individual difference measures.

The facets of satisfaction are defined as:

1. Satisfaction with Company, Management, and Recognition--the degree to which employees are satisfied with the company, management, and recognition (similar to overall satisfaction).
2. Satisfaction with Pay--the degree to which employees are satisfied with the money, fringe benefits, and other commodities that have financial value which organizations give in return for their services.
3. Satisfaction with Job Content--the degree to which employees are satisfied with the experienced characteristics of their jobs.

The fourth dependent variable is defined as:

4. Propensity to Leave--the degree to which employees are voluntarily leaving the organization (i.e., perceived voluntary turnover).

Diagram II presents the interactional variables in the standard regression format. The specific hypotheses to be tested in this study are stated in Chapter III.

The following section deals with the theoretical and empirical evidence which supports the above contentions. Before considering how individual differences interact and mediate the relationship or association between task structure and the outcome variables, it is necessary to examine in detail previous studies regarding the relationship of task structure to satisfaction and propensity to leave.

DIAGRAM II: OPERATIONALIZATION
OF THE VARIABLES

OPERATIONALIZATION		
INDEPENDENT VARIABLE	MODERATORS	DEPENDENT VARIABLE
<u>FACETS OF TASK STRUCTURE</u>	<u>INDIVIDUAL DIFFERENCES</u>	<u>OUTCOMES</u>
1. Autonomy	1. Internal-External Life Orientation	1. Satisfaction with: a. Company, Management and Recognition
2. Skill Variety	2. Self-Esteem	b. Pay
3. Task Feedback	3. Willingness to Accept Bureau- cratic Orientation:	c. Job Content
4. Task Identity	a. Hierarchy of Authority	2. Propensity to Leave
5. Upward Influence	b. Division of Labor	
	c. Rule for Incumbents	
	4. Need for Achievement	
	5. Need for Affiliation	
	6. Demographic Variables	

Concept and Evidence Regarding Task Structure

The objective and perceived characteristics of jobs in relation to work environments and worker attitudes have long been of major concern to organizational theoreticians. Numerous studies (Beer, 1968; Shepard, 1969, 1970; Cummings and El Salmi, 1970; Lawler and Hall, 1970; Bishop and Hill, 1971; Campbell, 1971; Hackman and Lawler, 1971; Kirsch and Lengermann, 1972; and Wanous, 1974) on job structures' relationships to work attitudes and performance have been published since Hulin and Blood's (1968) critical review of the literature concerning job enlargement and the principles of job enrichment.

Work tasks are the link through which individuals relate to their organizational environments. Therefore, tasks, in many organizations, may be the major derivative of such factors as the nature of supervision, the degree of intrinsic motivation stemming from task-role related duties, and the amounts and types of rewards available to the worker. Consequently, an individual's task-role relationship should relate to such job-related factors or attitudes as overall satisfaction, satisfaction with pay, the work itself, and general performance motivation (Turner and Lawrence, 1965; Hackman and Lawler, 1971). With these above empirical findings, task holders in any job (if compared with those of other jobs) would, consequently, be expected to have relatively homogeneous job attitudes. More importantly, their organizational outlooks would be expected to be homogeneous too.

In this present study a number of job-related attitudes (overall satisfaction, satisfaction with the task itself or job satisfaction, and pay satisfaction) and organization-related attitudes (e.g., propensity to leave) were measured that were assumed to be influenced by the organizational task-role relationship of the individual.

This study concerns the role of the seven individual differences in moderating the relationship between the five facets of task structure and the subsequent reaction to these task characteristics. If a particular individual difference variable works as a moderator, one would expect to find significantly more positive correlations for high versus low personality characteristics.

Perspective Viewpoint of Task Structure

Over one hundred individual articles, books, and monographs (see Table 1, pp. 70-75) have been devoted to the study of the relationship between task structure, satisfaction, and outcome variables. Almost all³ of the theory and empirical research concerned with attitudes and behavior of employees assumes that they are influenced by the objective characteristics of the work situation.

Early psychological theory and research on employee selection, placement, and training started with the assumption that the task to be performed in the organization is taken as a constant within some theoretical framework. In simpler terms, these researchers

³Exceptions found in Likert, 1961; Turner and Lawrence, 1965; Hackman, 1970; Hackman and Lawler, 1971; Sims and Szilagyi, 1974; Hackman and Oldham, 1974; Koch, 1974; Wanous, 1974; Hackman and Oldham, 1975; and Jenkins et al., 1975.

assumed that the complex process of fitting people to tasks could best be achieved by modifying the behavior of employees to meet the demands of the tasks. Recently, great interest has developed in an alternative viewpoint. Consequently, the investigation of individual differences has received less emphasis than the general treatment attempts of job enrichment to change the nature of tasks.

Hulin and Blood (1968) indicate that many problems and difficulties exist in the current job enrichment-job enlargement theory. Their arguments might be extended to the recent writings of job design or redesign researchers. There seems to be a tendency on the part of these job redesign writers to overemphasize the commonness of task structure problems. The facets of task structure are thought to be the most important variables, without consideration of individual differences. But, as Brown (1954) indicates:

Even under the existing conditions, which are far from satisfactory, most workers like their jobs. Every survey of workers' attitudes which has been carried out, no matter in what industry, indicates that is so. (p. 190-191)

Early research on selection and placement also emphasized the importance of performing good job analyses and more recently a number of motivation theories (Herzberg et al., 1957; Vroom, 1964; Scott, 1966; Porter and Lawler, 1968; Schwab and Cummings, 1973; and Lawler, 1973) have been concerned with the influence of the work environment on various outcome behaviors. In addition, Lawler (1973) has indicated that the nature of jobs and their characteristics also play an important role in determining the quality of work life. Lawler has argued that little improvement can be made in the

quality of work environments until the characteristics and outcomes of task structure are specified. In this same vein, Hulin (1971) indicates that almost all job attitude, satisfaction, and performance research has been severely ". . . limited by our lack of a definition of what we mean by 'task' or 'job'." (p. 182)

The measurement of task structure is important in at least three areas of organizational research. First, current interest in alienation from work (Shepard, 1969, 1970, 1973; Meissner, 1971; and Susman, 1972, 1973) provides special impetus to research into how task structure influences satisfaction and performance. An understanding of the effects of task structure will provide direction for the job enrichment-enlargement advocates who are advocating mass job redesign programs regardless of individual worker differences.

Secondly, work motivation, both at the worker and managerial level, is thought by some to be highly influenced by the facets of task structure. For example, Scott's (1966) activation theory indicates that the amount and variety of stimulation motivates the worker and enables him or her to maintain a high level of performance. In other words, high task structure (i.e., a nonrepetitive, nonroutine task) is likely to serve as a positive motivator of performance (Hulin, 1971, p. 174). In a similar theory, Schwab and Cummings (1973) indicate task structure to be related to an expectancy theory of motivation:

Information about the task scope on the variables in expectancy theory could be useful. If these relationships could be identified, then the probable impact of task scope could

be predicted. That is, the independent variables in expectancy theory can be viewed as intervening between task scope on the one hand and employee performance on the other hand. (1973, p. 8)

In addition, Hackman and Lawler (1971) and Lawler (1973), along with most of the expectancy-type theoreticians, agree that task structure is related to motivation and performance.

Thirdly, the study of leadership has been hampered by the lack of information on the relationship between task structure and leader behavior, subordinate satisfaction, and performance. A noteworthy exception is House's (1971) path-goal theory of leader behavior which attempts to provide insight into the influence of task structure upon the supervisor-subordinate relationship. However, House seemingly has the problem mentioned by Hulin above--the failure to properly define, operationalize, and assess task structure (Hulin, 1971, p. 165-167). House uses role ambiguity as a surrogate measure of task structure, a measure which possibly is related to the specific facets of task structure. Fiedler's (1967) contingency theory of leadership also lacks a proper measure of task structure.

Prior Evidence Regarding the Facets of Task Structure

Although most social psychologists and sociologists acknowledge the many benefits of increased work specialization, many of them feel that low task structure has led to a decrease in job satisfaction. Researchers such as Merton (1947), Krech and Crutchfield (1948), and Katz (1954) have indicated the consequences of low task structure. Recently Scott and Cummings (1973) specifically stated

6. Predetermination of Tools and Techniques: The manner in which individual employee performs his or her task is determined by staff specialists. The worker may never see, much less influence, these individuals. (pp. 71-83)

Of course, these six facets of the job (or task structure) are characteristic of Frederick Taylor's ideas concerning a scientific management approach to designing tasks. As Taylor (1911) suggested more than sixty years ago:

The work of every workman is fully planned out by the management at least one day in advance, and each man receives in most cases written instructions, describing in detail the task which he has to accomplish. . . This task specified not only what is to be done but how it is to be done and the exact time allowed for doing it. (p. 39)

The classic investigation of worker responses to simple, repetitive, machine-paced jobs came from 180 interviews conducted by Walker and Guest (1952) in an automated assembly plant. They found job content (the six above-mentioned facets of the task itself) to be the chief factor workers reported disliking about their jobs. They determined that factors such as pay and security were the most-liked features.

Herzberg et al. (1957) came to the same conclusion while studying the results of fifteen empirical studies involving over 28,000 employees. However, this conclusion is not consistent with Herzberg and his associates' (1959) contention that task structure can produce satisfaction but not dissatisfaction. Prior to these findings, Walker's (1950) IBM/Endicott experiment appeared, even though no quantitative data were reported, to decrease feelings

of boredom and frustration, lower production costs, and improve productivity by reversing the process of specialization. Generally, this reversal took the form of "job enrichment" as defined by Hulin and Blood (1968) (see Chapter I).

Positive results from increasing an employee's task structure (i.e., change programs) are reported for clerical jobs (Elliott, 1953), insurance type jobs (Guest, 1957) and public sector jobs (Goode, 1964; Pellissier, 1965).

Walker and Marriott (1954) report the existence of dissatisfaction with simple, repetitive, and machine-paced work. They measured the attitudes of three groups of employees: (1) two different groups of workers in assembly line plants, and (2) a third group in a metal-working mill where the tasks had considerable variety and challenge. Feelings of boredom and dissatisfaction were found in both groups of assembly line workers (36 percent in one and 35 percent in the other). However, only 8 percent of the mill workers expressed negative attitudes. Walker and Marriott further indicate that workers on the main line were more likely to express dissatisfaction than were workers off the line, where assignments had more task structure.

In conjunction with satisfaction and higher task structure, other quantitative factors have been uncovered. Kilbridge (1960a), in what Filley and House (1969, p. 222) call one of the most persuasive and rigorous studies of job enrichment, indicates that workers who performed a wider variety of tasks and were permitted to set their own pace and to vary their work methods were able to

assemble a pump twenty-six seconds faster than those whose work patterns were preestablished. The net result was a \$2,000 cost savings.

Biganne and Stewart (1963) report substantial improvements in work quality and major cost savings resulting from the application of job redesign methods to assembly line jobs. Furthermore, Herzberg (1968) and Ford (1969) indicate that job enrichment stems from job enlargement and job rotation. They both advocate job redesign without due consideration to personality variables.

Sheppard and Herrick (1972), influenced by Herzberg (1966) and Ford (1969), confirmed that dissatisfaction increases as tasks become less challenging (p. 57). However, they confuse their results by mixing the samples together (a national sample of 1,533 employees with a special sample of 101 auto workers from Kalamazoo, Michigan). In addition, their methodology and scale development, lacking internal reliability and validity, are suspect.

With little valid empirical data to support their contention, Sheppard and Herrick claim:

. . .It is possible that the same set of job tasks may be rated differently (in terms of its variety, for example) by workers who differ in personality structure especially regarding their degree of authoritarianism. (1972, p. 45)

In order to compare the studies done at Maytag (Kilbridge, 1960a; Biganne and Stewart, 1963), Conant and Kilbridge (1965) contrasted the effects and attitudes associated with assembly line and bench-type production. The self-report results indicate the workers had a strong preference for the highly structured jobs,

and that preference for either type of work (high or low task structure) could not be related to personal or individual differences. However, as Filley and House (1969) indicate, "it is interesting to note that, although 47 of the 61 workers indicated that they liked the variety in the bench production jobs, a slight majority also favored line task specialization" (p. 223). In other words, a slight majority of the workers favored low task structure. Thus, the positive correlation between task structure and satisfaction appears to be more complex than reported by Walker and his associates.

Recognizing this complexity and the possible interaction of individual differences with variables other than task structure, Turner and Lawrence (1965) developed operational measures of the six facets of task structure used by Walker and Guest (1952). Turner and Lawrence predicted six facets of task structure to be positively related to worker satisfaction and attendance: (a) variety, (b) required interaction, (c) autonomy, (d) optimal interaction, (e) knowledge and skill required, and (f) responsibility. This was the first empirical study to measure characteristics of the task itself explicitly and scientifically. Rating of each of the six facets for each of 47 different jobs were obtained from objective field observations and interviews by the researchers. Examination of the interrelationships showed that the six facets (or requisite task attributes (RTA) in Turner and Lawrence's terms) were closely related to one another. Specifically, Turner and Lawrence found the following evidence in relation to task structure:

1. Perceived task attribute scores were positively related to RTA scores and to job satisfaction.
2. F-scale scores (authoritarianism) were positively related to job satisfaction for city (and all) workers and to pay for town workers.
3. The strong relationship between scores of task attributes and worker perceptions of the characteristics of their jobs tends to validate the usefulness in future research. . .
4. The very strong relationship between worker's perceptions of task attributes and their experienced job satisfaction suggests that how workers perceive their task may predict how their ultimate satisfaction with their job more accurately than how the job attributes are systematically scored by someone else. (Turner and Lawrence, 1965, pp. 109-112)

Generally, the expectation that employees working on high task structure jobs would have high job satisfaction and lower absenteeism was not fully supported. It appears that the predicted relationship only held for workers from plants located in small towns. Employees in urban settings reported lower satisfaction with their tasks when their tasks were high on Turner and Lawrence's RTA Index. Finally, the RTA Index was unrelated to absenteeism for urban workers. However, Turner and Lawrence argue that the differences obtained in response to good jobs (those with high task structure) were substantially moderated by individual differences (cultural backgrounds of workers).

Perhaps the most widely known study of task structure is Hackman and Lawler's (1971) investigation of over 270 jobs in the telephone industry. Hackman and Lawler revised and refined portions of the Turner and Lawrence (1965) procedures, and added a number

of attitudinal, motivational, and individual difference measures.

The instrument utilized by Hackman and Lawler tapped the following six dimensions of task structure:

1. Variety: The degree to which a job requires employees to perform a wide range of operations in their work and/or the degree to which employees must use a variety of equipment in their work.
2. Autonomy: The extent to which employees have a major say in scheduling their work, selecting the equipment they will use, and deciding on procedures to be followed.
3. Task Identity: The extent to which employees do an entire or whole piece of work and clearly identify the results of their efforts.
4. Task Feedback: The degree to which employees receive information as they are working which reveals how well they are performing on the job.
5. Dealing with Others: The degree to which a job requires employees to deal with other people to complete the work.
6. Friendship Opportunities: The degree to which a job allows employees to talk with one another on the job and to establish informal relationships with other employees at work (p. 267).

Hackman and Lawler segmented these six facets into two categories.

The first four were labeled "core dimensions" of task structure;

Hackman and Lawler postulated that individuals would be able to obtain personal satisfaction if they held jobs which they experienced as high in variety, autonomy, task identity, and task feedback.

The last two dimensions, dealing with others and friendship opportunities, were not viewed as central to task structure's relationship to job satisfaction (pp. 265-269), and thus were grouped together.

Addressing themselves to the question of independence, Hackman and Lawler state:

Although there is some tendency for the six dimensions to be positively related to one another, only two of the correlations are of substantial magnitude: jobs seen as having high variety are also seen as being high in autonomy and friendship opportunities. The level of interrelationship among the six dimensions as measured in the present research is lower than that reported by Turner and Lawrence (1965), and does not mitigate against the use of the six dimensions separately as descriptors of job characteristics. (p. 269)

Hackman and Lawler's empirical investigation of the need strength of 208 employees and 62 supervisors in a telephone company found that:

1. The nature of the relationships between task structure (i.e., the four core dimensions) and employee reactions to work (including satisfaction, performance, and absenteeism) will depend on the need states of the employees.
2. Specifically, positive relationships were obtained between autonomy, variety, task feedback, and task identity (i.e., the independent variables) and the dependent measures of motivation, satisfaction, performance, and attendance.
3. The core dimensions are, as expected, strongly and positively related to overall job satisfaction and to the degree that employees feel personally involved in their work.
4. Jobs high in all four core dimensions tend to be more substantial in magnitude and more statistically reliable (S's were partitioned into three groups: (a) those who described their jobs as being above the 60th percentile on all four core dimensions; (b) those who described their jobs as being below the 40th percentile on all four core dimensions; and (c) the majority of S's who typically describe their jobs as being high on some of the core dimensions and low on others).
5. The moderating effect of individual need strengths (self-esteem, security, pay, etc.) or higher order need strength was found to be positive and moderated the relationship between individual differences and task structure except for task identity.
6. The present findings and conclusions fit well with the previous research of Turner and Lawrence (1965) and Hulin and Blood (1968).

7. Individual differences also moderate the relationship between job level and satisfaction (as well as the relationship between job level and other dependent variables).
8. In summary, results substantially extend previous results reporting the moderating effect of individual differences upon satisfaction. (1971, pp. 271-280)

Miner and Dachler (1973) support the Hackman and Lawler job characteristics article by noting it is a particularly significant investigation with important conclusions for both job enrichment researchers and organizations. Miner and Dachler, commenting on Hackman and Lawler's study, indicate:

. . .that the positive relationship between enlarged jobs (in terms of variety, autonomy, task identity, and feedback) and favorable outcomes (satisfaction, high quality work, and low absenteeism) is primarily a characteristic of those who desire higher order need satisfaction strongly. Thus, it would appear that individuals in whom such needs are dominant will be most likely to respond favorably to job enlargement. (1973, p. 394)

Similarly, Kornhauser's (1965) Mental Health Studies with 655 urban-industrial workers indicates the relationship between systematic differences among the respondents and the level of skill and the repetitiveness in the tasks performed. Kornhauser found that workers employed at simple, short-cycle tasks responded negatively which he concluded indicated poor mental health and that these findings of poor mental health were task-related.

Similar results were reported by Argyris (1959) in a comparison of the attitudes of 90 unskilled and semiskilled employees, with those of 34 skilled employees. The low task structure employees held lower estimates of their abilities, wanted to be left alone, to be passive, and to have a routine, unvarying life style.

In summary, there is evidence supporting the hypothesis that high task structure will be positively related to the outcome variables. This research study adds upward influence to the facets of task structure under consideration (autonomy, variety, task feedback and task identity).

Upward Influence

Vroom (1960, 1964), Strauss (1963), Litwin and Stringer (1968), and Strauss and Rosenstein (1970) have indicated that "participation" is an important variable, related to such dependent variables as satisfaction, productivity, and turnover. French, Israel, and As^o (1960) indicate that participation, one of the five facets of task structure, has been given a number of meanings and has seldom been clearly defined. Generally, it refers to the degree to which a person takes part in a discussion or activity. An individual who takes an active part in a given task is said to participate a great deal, while one who plays a more passive role does not participate to the same degree. Vroom (1960) defines participation as the amount of influence an individual has on decisions and plans. Participation is defined here as upward influence, or the control or influence an employee has on his or her job. This definition, like Vroom's (1960), is somewhat more restrictive than either democratic leadership or group decision making as used by Maier (1952). This definition of upward influence should be distinguished from such concepts as control and democratic leadership. The latter terms also include control other than that which is inherent in an employee's tasks.

Litwin and Stringer (1968), utilizing three important determinants of work-related behavior (the need for achievement, the need for power, and the need for affiliation) presented a behavioral model based on Atkinson's (1964) and McClelland's (1961) motivation model. Integrated with the McClelland-Atkinson model is Lewin's (1938) field theory model of behavior. These theories all state that the tendency to act in a certain way depends on the strength of the belief that a certain act will lead to a particular outcome. Recently, however, the expectancy theories of motivation have drawn criticism (Behling and Starke, 1973). However, as stated in Chapter I, the intent of this dissertation is not to present a motivation model or argue with the pros and cons of expectancy theory. The intent within this section is to provide prior theory and empirical evidence from which specific hypotheses can be investigated.

A related concept which is more inclusive than upward influence is Morse and Reimer's (1956) organization control which describes the role of various organizational levels in decision-making. In an industrial setting, Morse and Reimer tested the hypotheses concerning the role of rank and file employees in decision-making in relation to satisfaction and productivity. The experimental design is summarized by the authors as follows:

Using four parallel divisions of the clerical operations of an organization, two programs of changes were introduced. One program, the Autonomy program involving two of the divisions, was designed to increase the role of rank-and-file employees in the decision-making processes of the organization. The other two divisions received a program

designed to increase the role of upper management in the decision-making processes (the Hierarchically-controlled program). (1956, p. 129)

According to their predictions, Morse and Reimer found that satisfaction of employees increased in the Autonomy program and decreased in the Hierarchical program. Both programs, however, significantly increased productivity, with the Hierarchically-controlled program resulting in the greater increase.

As part of the Morse and Reimer study, Tannenbaum (1954) investigated the role of personality factors in determining worker adjustment to the two above-cited experimental programs. Tannenbaum found that persons suited to the program in which they were placed wanted their respective programs to last longer and were more satisfied than persons who were less suited (according to a surrogate satisfaction measure) to the program structure in which they were placed. He concluded that the "social system cannot be fully evaluated without an understanding of the psychological make-up of the individuals participating in that system" (1954, p. 222).

McGregor (1944) points to upward influence as an important means for directing the need for independence, defined as a predisposition to strive for self-reliance or to do things without help, into constructive channels:

One of the most important conditions of the subordinate's growth and development centers around his opportunities to express his ideas and to contribute his suggestions before his superiors take action on matters which involve him. Through participation of this kind he becomes more and more aware of his supervisor's problems, and he obtains a genuine satisfaction in knowing that his opinion and ideas are given consideration in the search for solution. (p. 152)

Although McGregor seems to regard need for independence as a general characteristic which has implications for management, he acknowledges individual differences in the variance of the strength of this need:

There are vast individual differences in tolerance for the inevitable pressures and insecurities attendant upon the acceptance of responsibility. Some subordinates seem to be content to achieve a high degree of security without independence. Others thrive on the risks and the dangers of being "on their own." (p. 152)

The concept of authoritarian personality (Adorno et al., 1950) might also be relevant for predicting the need for upward influence. Sandford (1963) found that an authoritarian personality preferred an environment in which the degree of upward influence was low. On the other hand, an equalitarian personality (willing to accept a low level of bureaucracy or low authoritarianism) was found to accept low upward influence only as circumstances demanded it. Of course, Adorno et al. reported that a highly authoritarian person is characterized by a tendency toward submission to parental and authority figures. Thus, Sandford's findings give further support to the possibility that a willingness to accept a high or low bureaucratic orientation may be affected by certain amounts or degrees of upward influence.

Vroom (1960), using a concept similar to Adorno's authoritarian personality, postulated that participation in decision-making, when allowed to vary with the personality of the individual and with the environment of the organization will increase effective performance. Concurrently, "the more an individual participates in

decision-making on his job, the greater will be his motivation for effective performance in that job" (p. 13).

Vroom found a significant but low positive correlation between the amount of participation and an individual's attitudes toward his job. (p. 47-48) In addition, he found significant differences in the correlation between participation and attitudes toward the job for high and low authoritarian groups. Specifically, Vroom verified his hypothesis that "the more authoritarian the individual, the less the extent to which participation in decision-making in his job will result in his developing a more favorable attitude toward that job." (1960, p. 17)

To summarize the upward influence aspect of task structure, there is considerable evidence that a number of different behavioral patterns effect upward influence or participation. Upward influence is related to a large number of dependent variables including attitudes, absences, productivity, satisfaction, and turnover (Vroom, 1960).

There has been relatively little empirical research, however, on personality variables which interact with upward influence. That research which has been conducted on this problem has generally produced positive results. The task remains, however, to determine the nature and exact operational measures of the personality variables and the nature of their interaction with upward influence.

Summary of Evidence Regarding Task Structure

From Table 1 on the following pages it is abundantly clear that the relationship between task structure and the outcome variables

Table 1: Theory and Empirical Evidence
For and Against Task Structure's
Relationship with Outcome Variables

Researcher	Positive Relationship Between Task Structure and Satisfac- tion, Productivity and Turnover	Negative or Other Relationship Indi- cated
1. Kornhauser (1922)	positive (Turnover)	
2. Bills (1923)		Theory, Other factors
3. Fryer (1926)		negative
4. Wyatt, et al. (1929a)	positive (Productivity)	
5. Wyatt, et al. (1929b)	positive (Productivity)	
6. Wyatt (1934)	positive (Productivity)	
7. Wyatt et al. (1937)	positive (Productivity)	
8. Hall & Locke (1938)		negative
9. Cain (1942)		negative
10. Super (1939)	positive (Satisfaction)	
11. Walker (1950)	Theory	
12. Centers (1952)	positive (Satisfaction)	
13. Walker & Guest (1952)	positive (Satisfaction), Theory	
14. Kriedt and Gadel (1953)	positive (Turnover)	
15. Smith (1953)		negative
16. Elliott (1953)	positive (Satisfaction)	
17. Ryan & Smith (1954)		negative

Table 1: Theory and Empirical Evidence for and
Against Task Structure's Relationship
with Outcome Variables - (continued)

Researcher	Positive	Negative
18. Walker & Marriot (1954)	positive (Satisfaction)	
19. Ash (1954)	positive (Satisfaction)	
20. Marks (1954)	unclear	
21. Smith (1955)		negative, Theory, Other factors
22. Smith & Lem (1955)		negative, Theory
23. Guest (1957)	positive (Satisfaction)	
24. Walker (1957)	positive (Satisfaction)	
25. Davis (1957)	positive (Satisfaction)	
26. Kennedy & O'Neil (1958)		negative
27. French (1958)	positive	Other factors
28. Herzberg, et al. (1959)	positive (Satisfaction), Theory	
29. Argyris (1959)	positive (Satisfaction)	
30. Kilbridge (1960a)	positive (Satisfaction)	
31. Kilbridge (1960b)		negative
32. Kilbridge (1961)		negative
33. Likert (1961)	positive (Satisfaction), Theory	
34. Kornhauser (1962)	positive (Satisfaction), Theory	
35. Argyris (1962)	Theory	
36. Turner & Miclette (1962)		negative
37. MacKinney et al. (1962)		Theory, Other factors

Table 1: Theory and Empirical Evidence for and
Against Task Structure's Relationship
with Outcome Variables - (continued)

Researcher	Positive	Negative
38. Biganne & Stewart (1963)	positive (Satisfaction)	
39. Vroom (1964)		negative, Theory, Other factors
40. Blauner (1964)		curvilinear
41. Goode (1964)	positive (Satisfaction)	
42. Davis (1965)	positive (Satisfaction)	
43. Conant & Kilbridge (1965)	positive (Satisfaction)	
44. Pelissier (1965)	positive (Satisfaction)	
45. Breer & Locke (1965)		Theory, Other factors
46. Turner & Lawrence (1965)	positive (Satisfaction)	negative, Theory, Other factors, curvilinear
47. Kornhauser (1965)	positive (Satisfaction), Theory	
48. Davis (1966)	positive (Satisfaction)	
49. Scott (1966)	Theory	
50. Opsahl & Dunnette (1966)		Theory, Other factors
51. Reif & Schoderbek (1966)		negative
52. Herzberg (1966)	positive (Satisfaction), Theory	
53. Crisera (1966)	positive (Satisfaction)	
54. Peltz & Andrews (1966)	positive (Satisfaction)	
55. Stewart (1967)	positive (Satisfaction)	
56. House & Wigor (1967)	positive (Satisfaction)	Other factors

Table 1: Theory and Empirical Evidence for and
Against Task Structure's Relationship
with Outcome Variables - (continued)

Researcher	Positive	Negative
57. Lawler & Porter (1967)		Theory, Other factors
58. Blood & Hulin (1967)		negative
59. Smith & Cranny (1968)		Theory, Other factors
60. Hulin & Blood (1968)		Theory, Other factors
61. Goldthorpe, et al. (1968)		negative, Theory, Other factors
62. Walker (1968)	positive (Satisfaction), Theory	
63. Mann & Hoffman (1968)	positive (Satisfaction), Theory	
64. Shepard (1968)	positive (Satisfaction)	
65. Ford (1969)	positive (Satisfaction), Theory	
66. Filley & House (1969)	unclear	
67. Shepard (1969)	positive (Satisfaction)	
68. Lawler (1969)		negative
69. Meisner (1969)	positive (Satisfaction)	
70. Hackman (1969a)		Theory, Other factors
71. Hackman (1969b)		Theory, Other factors
72. Hall & Lawler (1970)	positive	Other factors
73. Hackman (1970)		Theory, Other factors
74. Fullan (1970)	positive (Satisfaction)	
75. Lawler (1970)		Theory, Other factors
76. Shepard (1970)	positive (Satisfaction)	

Table 1: Theory and Empirical Evidence for and Against Task Structure's Relationship with Outcome Variables - (continued)

Researcher	Positive	Negative
77. Hackman & Lawler (1971)	positive (Satisfaction)	Theory, Other factors
78. Cherrington, et al. (1971)	positive (Satisfaction)	
79. Meissner (1971)	Theory	
80. House (1971)		Theory, Other factors
81. Taylor (1971)	positive (Satisfaction)	
82. Levine & Weitz (1971)		Theory, Other factors
83. Saleh (1971)	positive (Satisfaction)	
84. Scott & Mitchel (1972)		Curvilinear, Theory
85. Thorsrud (1972a)	positive (Satisfaction)	
86. Sheppard & Herrick (1972)	positive (Satisfaction), Theory	
87. Thorsrud (1972b)	positive (Satisfaction)	
88. <u>Work In America</u> (1972)	Theory	
89. Susman (1972)	positive (Satisfaction)	
90. Wild & Kemper (1972)	positive	Other factors
91. Tudor (1972)	positive (Satisfaction)	
92. Davis (1972)	positive	
93. Swab & Cummings (1973)	Theory	
94. Susman (1973)	positive (Satisfaction)	
95. Argyris (1973)	Theory	
96. Form (1973)	positive (Satisfaction)	

Table 1: Theory and Empirical Evidence for and Against Task Structure's Relationship with Outcome Variables - (continued)

Researcher	Positive	Negative
97. Schuler (1973)	Theory	
98. Lawler (1973)		negative, Theory, Other factors
99. Miner & Dachler (1973)		Theory, Other factors
100. Lawler, et al. (1973)	positive	Theory, Other factors
101. Steers & Porter (1974)	positive	Theory, Other factors
102. Dickson (1974)		negative, Theory, Other factors
103. Hackman & Oldham (1974)		Other factors, Theory
104. Robey (1974)		negative, Theory, Other factors
105. Sims and Szilagyi (1974)		unclear
106. Kaufman (1974)	positive (Performance)	
107. Fossum (1974)	positive (Satisfaction)	Theory, Other factors
108. Pritchard & Peters (1974)	positive (Satisfaction)	Theory, Other factors
109. Koch (1974)	positive (Satisfaction)	negative, Theory, Other factors
110. Wanous (1974)		negative, Theory, Other factors
111. Stone & Porter (1975)	positive (Satisfaction)	
112. Hill (1975)		negative, Theory, Other factors
113. Jenkins, et al. (1975)		unclear

become mixed, at best, when the before-mentioned suggestions of Katz and Kahn (1966), Likert (1961) and March and Simon (1958) concerning the interaction of variables are investigated. Table 1 presents in chronological order theoretical and empirical studies reporting the relationship of task structure and certain outcome variables in organizational research. Sixty-two of the cited researchers have found a positive relationship between task structure and satisfaction, productivity, performance, or turnover.

However, forty-seven of the studies cited in Table 1 report negative results and/or indicate that individual differences moderate the various relationships and associations. Critically, most of the recent studies (1971 through 1975) utilized both the task and individual differences approach; or an appropriate surrogate such as need strength. One might speculate as to whether the results of the other sixty-two studies would have been different if they had included individual differences in their conceptual framework. Recent research (Hackman and Lawler, 1971; Pritchard and Peters, 1974; Robey, 1974; Steers and Porter, 1974; Dickson, 1974; Wanous, 1974; Hackman and Oldham, 1974; and Hill, 1975), measuring both task structure and individual differences, shows that individual differences moderate the relationship between task structure and outcome variables. Furthermore, ten of the studies in Table 1 present a combination of positive and negative findings when controlling for individual differences. Four of the studies are unclear or undecided as to the effect of task structure on satisfaction, or of individual differences upon the outcome variables.

It is clear that additional research of both task structure and individual differences, utilizing appropriate personality measures, must be undertaken.

The next section of the chapter looks at the theoretical and empirical support for the individual difference hypothesis.

Concept and Evidence Regarding Individual Differences

As indicated earlier in this chapter, theoreticians (such as Katz, 1955; Cornbach, 1957; March and Simon, 1958; Likert, 1961; Katz and Kahn, 1966) have called upon organizational psychologists to investigate and test the interactional effects of individual differences upon job attitudes and outcomes. Recently, empirical studies regarding the relationship of task structure and certain individual differences operationalized as need strengths (i.e., Hackman and Lawler, 1971; Pritchard and Peters, 1974; Robey, 1974; Steers and Porter, 1974; Dickson, 1974; Wanous, 1974; Hackman and Oldham, 1974; Hill, 1975; and Johnson and Stinson, in press) combined with other motivational type studies (i.e., Landy, 1971; Johnston, 1974; Lawler, 1966, 1970; Downey, Hillriegel, and Slocum, in press; and Broedling, 1975) have tended to indicate that individual differences moderate the relationships of certain independent and dependent variables. In the present study, the five facets of task structure are considered to be the independent variables, the seven individual difference variables are moderators, and the four outcomes (the three facets of satisfaction and propensity to leave) are the dependent variables.

From a conceptual and operational viewpoint, Nunnally (1967) proposes that the measurement of personality traits is mainly a result of the study of individual differences. He states that individual differences can be understood through the following three broad aspects of personality:

1. Social Traits: The characteristic behavior of individuals with respect to other people. Typical social traits are honesty, gregariousness, shyness, dominance, and humor. Social traits are often said to constitute the surface layer of personality, the way that an individual appears in society.
2. Motives: Individual differences in "needs" or "drives," particularly the "non-biological" drives such as the needs for affiliation, aggression, and achievement. Motives are often spoken of as constituting personality "dynamics."
3. Adjustment versus Maladjustment: The relative freedom from emotional distress and/or socially disruptive behavior. Maladjustment relates to the so-called neuroses and psychoses, and adjustment relates to the opposite of these. (p. 470)

The present study classifies the seven individual difference variables shown in Diagram I as Nunnally's "motives" and links them through perceptions.

In recent years, increasing attention has been focused on demographic characteristics (age, sex, job and company tenure, etc.; Quinn et al, 1974; and House and Wigdor, 1967), personal characteristics (rural or urban socialization, plant location, occupational level, etc.; Hulin and Smith, 1965; Turner and Lawrence, 1965; Hulin, 1966, 1969; Blood and Hulin, 1967; Hulin and Blood, 1968; Blood, 1969, 1973; Herman and Hulin, 1972; Wild and Kempner, 1972; and Fossum, 1974), and individual differences (need for achievement, internal-external (I-E) orientation, authoritarianism, etc.; Adorno

et al., 1950; McClelland et al., 1953; McClelland, 1961; Rotter, 1966; Korman, 1966, 1967; 1970; Lawler, 1968, 1970, 1973; Litwin and Stringer, 1968; Kohn, 1969; Hermans, 1970; Friis and Knox, 1972; Gavin, 1973; South, 1974; Koch, 1974; Broedling, 1975; and Johnson and Stinson, in press) affecting the relationships between sets of independent and dependent variables.

Recently, Porter, Lawler, and Hackman (1975) have attempted to summarize the individual differences viewpoint and have indicated why organizational theorists should expend more research efforts in this direction. They state:

We believe that individual differences should be looked at in a new way, by managers and behavioral scientists alike, and that differences should be treated in a new way in organizations. The evidence is increasing that individual differences moderate the way people respond to various aspects of organizations and to the practices of organizations. . . particular job designs, leadership styles, reward systems, training procedures, and the like simply do not have the same effects for all people who work in an organization. (p. 520)

Moreover, Porter, Lawler, and Hackman make the three following observations:

1. . . .It tends to be not only the skills and abilities of the people that make the difference; instead, it is also their personal psychological make-up that counts . . .
2. While the moderating effects of individual differences are becoming increasingly well documented, much more (and much more systematic) research needs to be done on the nature and extent of the observed efforts . . .we need to know exactly what it is about different people that is responsible for the effect and the circumstances under which it does and does not occur.
3. In particular, . . .the process of individualizing organizations should begin at those points where organizational practices have direct and immediate effects on

the day-to-day work activities of the individual. These include: the job itself. Probably the single most potent influence on what a person does at work is his job. . . people with different psychological make-ups do indeed respond differently to challenging versus routine jobs. It would seem warranted, therefore, to try assigning people to different types of jobs (assuming sufficient skill to do the work) partly on the basis of their personal psychological needs and not just their abilities alone. (1975, pp. 520-521)

To garner empirical evidence in support of these individual difference propositions, the above authors call for the following research strategy to be employed:

1. (Develop) . . . complete knowledge of how individual differences moderate employee reactions to organizational practices. . . and
2. (Develop) valid measures of the individual differences found to be important moderators. (1975, p. 523)

In order to test the above theoretical propositions empirically, the conceptual framework indicated in Diagram I was developed as a multivariate interactional model indicating that individual differences act as moderators (Saunders, 1956; Ghiselli, 1963; Zedeck et al., 1971; Zedeck, 1971; Abrahams and Alf, 1972; and Andrews et al., 1973) of certain outcome behaviors. Specifically, internal-external control, self-esteem, willingness to accept a bureaucratic orientation, need for achievement, and need for affiliation moderate the relationship between task structure and the specific outcome behaviors. These moderators are often called intervening, combining, interactive, or interaction variables.

The following section deals with the theoretical and empirical evidence to support the hypotheses presented in Chapter III regarding

individual differences. This section presents each individual difference variable in sequence and details each moderator variable.

Internal-External Life Orientation (I-E)

Internal-external life orientation is defined as the extent to which a person generally believes his life is a product of his own behavior (internal control) as opposed to fate, change, or non-contingent control by others (external control). As Haas (1964) indicates, the degree to which individuals have different internal or external concepts of a particular role may be due to differences in their own self-conceptions, their social class identifications, occupational specialization and experiences, and the job they hold. An internally controlled person essentially feels in control of the events of his or her life; an externally controlled person believes that his or her life is for the most part beyond his or her influence or control.

Perceived internal-external control as measured by the I-E scale, a measure of a person's perception that the events in his or her life are contingent upon his or her behavior has been related to numerous variables in hundreds of psychology studies. A brief review of these are provided by Rotter (1966), Lefcourt (1966), and Joe (1971).

The extensive research surrounding Rotter's (1966) I-E scale⁴ indicates considerable interest in perceived differences in the

⁴See Lefcourt (1972) for an extensive review of the I-E construct.

consequences of one's own behavior. Rotter suggests that those members scoring low on his twenty-three item forced-choice instrument (internals) are said to believe they can significantly influence their outcomes by their own behavior whereas externals believe their behavior to be much less decisive in this respect. The theoretical background for Rotter's I-E concepts originates from social learning theory (Rotter, 1954, 1955, 1960). Rotter (1966) indicates:

In social learning theory, a reinforcement acts to strengthen an expectancy that a particular behavior or event will be followed by that reinforcement in the future. Once an expectancy for such a behavior-reinforcement sequence is built up the failure of the reinforcement to occur will reduce or extinguish the expectancy. . . .It follows as a general hypothesis that when the reinforcement is seen as not contingent upon the subject's own behavior that its occurrence will not increase an expectancy as much when it is seen as contingent. Conversely, its non-occurrence will not reduce an expectancy so much as when it is seen as contingent. It seems likely that, depending upon the individual's history of reinforcement, individuals would differ in the degree to which they attributed reinforcement to their actions. (p. 2)

Recently, the I-E concept has been operationalized in several ways: (1) as a personality variable relating to Valence-Instrumentality-Expectancy (VIE) theory (Broedling, 1975); (2) interacting with the antecedents and consequences of job behavior (Organ and Green, 1974a); (3) indicating individual differences in the conditionability in organizations (Organ, 1975); (4) relating to both role ambiguity and satisfaction (Organ and Green, 1974b); (5) relating as a predictor of task effort and satisfaction (Weiss and Sherman, 1973); (6) operating as a moderator between environmental

ambiguity and satisfaction (Korman, 1971); (7) relating to work variables (Valecha, 1972); and (8) relating to management style and satisfaction with supervision (Runyon, 1973)

Broedling (1975), in one of the rare studies finding any relationships between I-E and the VIE motivation model, found significant negative correlations between internal control and instrumentality, work motivation, job performance, and rank in organization. The test-retest reliability coefficient computed for the sample was .67. In addition, a multitrait-multirater matrix based on Campbell and Fiske's (1959) multitrait-multimethod concept indicated validity for ratings by supervisors, peers, and the subjects. Broadling found the negative direction of the correlation "indicates that internals (low scores on the I-E) scale tended to score higher on all of the motivational model components." (p. 67) Broedling's findings tend to supplement past evidence:

Internals as employees are more motivated to work than externals, actually perform better, and see working hard as being more instrumental in obtaining what they want.
(1975, p. 68)

Organ and Green (1974a) found that satisfaction with work was related to tenure, internal-external control, and role clarity. Rotter (1966), and Organ and Green indicate that those who believe that they can control their own fates are more likely to seek and make use of instrumental orientation. However, Kahn et al. (1964) suggest that the role-stress-role ambiguity situation causes a person to feel powerless and produce a sense of futility on his job.

Organ (1975) uses I-E to indicate that the power of a personality variable is useful in predicting conditionability over and above any common variance with ability measures. Yet, the behavioral-operant modification or conditioning literature has generally ignored the interaction of individual differences in conditionability and reinforcement. Skinner (1953, 1969, 1971) does recognize the differences between species (history of reinforcement, level of deprivation, etc.), but generally avoids the important issue of whether or not these are stable dimensions of human personality which moderate the effects of shaping. Korman (1971) suggests that role ambiguity seems to be far less important as a determinant of satisfaction than is the concept of locus of control. Korman did, however, find role ambiguity and locus of control to be an interactive influence on satisfaction. While the conceptualizations of the above researchers may differ, they all find evidence to support the hypothesis that I-E influences worker perceptions and is a determinant of certain outcome variables.

Runyon (1973) found satisfaction to be a function of the interaction between management style (highly structured or participatory) and employee internal control. However, probably the most important finding is that the significance of the personality variable, I-E, was dependent upon the interaction between management style and locus of control.

Organ and Green (1974b), studying scientists and engineers, found external control to be positively associated with role ambiguity and negatively associated with work satisfaction. Valecha

(1972) performed construct validation of the internal-external locus of reinforcement concept and work-related variables and found internal whites to be more progressive in terms of yearly earnings, kinds of job held, educational training related to the job and number of hours worked per week. Organ and Green's and Valecha's evidence taken together further supports the contention that internals have more knowledge of the world of work and supports Rotter's (1966) theory that "the individual who has a strong belief that he can control his destiny is likely to be more alert to those aspects of the environment which provide useful information for his future behavior." Furthermore, the above findings of Organ and Green (1974a and 1974b), Valecha (1972), and Korman (1971) seem to be mutually supportive.

In a laboratory study, Weiss and Sherman (1973) found that the I-E concept was not related to job satisfaction. However, the data indicated that most members were satisfied with their tasks.

Cherulnik and Citrin (1974), in a study involving college students, found internals to have a significantly greater desire for personal freedom. They indicated that the elimination of behavioral freedom elicits behavior whose antecedent conditions can reasonably be assumed to involve the motivational patterns of individuals.

Heisler (1974), in a field study involving the I-E construct, found that members exhibiting greater external control experience significantly less personal effectiveness (as indicated by the

number of promotions, salary increases, awards, etc., that they receive) than do members with an internal orientation. These are consistent with the evidence reported by Gemmill and Heisler (1972) that managers with more external control beliefs reported significantly greater job strain and less job satisfaction than did managers with an internal orientation.

Recently, Cherlin and Bourque (1974) found evidence to dispute Rotter's (1966) claim of the I-E scale's unidimensionality. Their results were as follows:

1. The I-E scale should not be considered unidimensional;
2. The characteristics of the population sampled may affect the structure of the factors obtained and also the strength of the reliabilities of the various factor scales; and
3. Other items used with the I-E scale in the same survey instrument may affect the structure and reliability of the resultant scales. (p. 565)

This scrutiny of the I-E scales of Rotter (1966), and perhaps Collins (1974), meets an important need. These critical subjects of reliability and validity are addressed in Chapter IV. Exhibit B indicates the items that comprise this study's I-E scale.

The above findings indicate that people's perceptions of their environmental influence has an effect on their behavior. In summary, it seems clear that internal-external life orientation does influence work variables and is associated with different outcome variables. Specifically, there is some evidence suggesting that internals are more satisfied than externals and that internals may have a lower propensity to leave the organization. In addition,

the research evidence suggests that internal control members are generally more highly motivated to perform since they see a stronger connection between their behavior and the goals they seek (Broedling, 1975; Organ and Green, 1974a and 1974b; and Heisler, 1974). Therefore, it seems that internals are easier to motivate by the use of reinforcements that are contingent upon their performance.

Self-Esteem

This study, like Kohn (1969), defines and segments self-esteem into two parts:

1. Self-confidence. The positive component of self-esteem: the degree to which people are confident of their own capabilities.
2. Self-deprecation. The self-critical half of self-esteem: the degree to which people disparage themselves. (This empirical division of self-esteem accords nicely with the possibility that one can be simultaneously confident of one's capacities and critical of oneself.) (Kohn, 1969, (p. 81-82))

Kohn's study, Class and Conformity: A Study in Values, is a noteworthy piece of evidence because it shows that members of society have clear self-conceptions.

Lawler (1973) indicates that self-esteem, along with past experiences, the actual situation, and communications from others, determines the expectancy model of effort (E) leading to performance (P). He suggests:

There are large individual differences in self-esteem. Low self-esteem people are generally poor estimators of their own ability to successfully carry out certain behaviors. They generally tend to underestimate the likelihood that they will be successful, although sometimes they are un-

realistically high in their estimates. Not surprisingly, people's self-esteem tends to be related to their $E \rightarrow P$ expectancies; as a result, motivating low-self-esteem people to perform well is difficult, since they are predisposed to believing that they cannot perform well. On the other hand, high-self-esteem people tend to have realistic $E \rightarrow P$ expectancies; thus, they respond more predictably and realistically to their environment. (p. 54-55)

Korman (1966) supports Lawler's argument that the $E \rightarrow P$ factor is important and that people don't always choose the occupation that is most attractive to them because they sometimes believe it is beyond their abilities. Korman agrees that self-esteem is one of the moderating variables (Saunders, 1956) influencing a person's expectancy that his effort will lead to successful performance.

Korman states:

The results of this investigation support quite strongly the prediction that "self-esteem" operates as a moderator variable in the process of vocational choice in that those who are high on this variable use their self-perceived needs differently from those who think relatively poorly of themselves. (p. 485)

Korman's (1967) results suggest that members "...with high self-esteem are more likely to seek out and accept the situations which seem to be keeping with their own self-percept, that is, a 'balance' situation." (p. 67) Korman indicates:

Since one's own self-perceived abilities are related to one's actual abilities to at least a modest level (Arsenian, 1942) and since self-esteem results from one's self-perceived adequacy in given roles, an interesting possibility for a closed-loop system presents itself here in that the low self-esteem individual is more accepting of situations where he does not think he will be adequate and where he actually will tend not to be adequate. This will lower his self-esteem even further and lead him even further to choose roles where he does not think he will be adequate. However, just the opposite would take place for the high self-esteem person. (p. 67)

Applying the balance theory and the above empirical field research, Korman (1970) presents arguments that the self-concept of an individual in relation to the task at hand is a determinant of the outcome which he or she will seek to obtain. In addition, this self-concept and task at hand are associated with satisfaction. Korman's evidence indicates that the "self-perceived competence for a task seems to facilitate performance on the task, particularly if the task provides one knowledge of how close/far he is to goal achievement. (p. 39)

Recently, Gavin (1973) found significant moderating effects of self-esteem between job expectancies and performance. Gavin's findings do not provide clear support for Korman's "work-behavior consistency" hypothesis. Gavin indicates:

From a methodological point of view, the self-esteem measure, while having been used in a number of studies (Ghiselli, 1971; Korman, 1966, 1967, 1970), has relatively little evidence concerning its construct validity. (p. 86)

However, self-esteem did have significant effects on the member's job and education levels. Again from a theoretical standpoint, however, Gavin states:

. . .the consistency hypothesis appears to receive indirect support from studies of achievement motivation, internal-external control of reinforcement, and risk taking. (p. 87)

In direct support of the present research, Gavin's study did demonstrate the utility of studying the moderating effects of self-esteem on the relationships between job expectancies and performance.

In a laboratory study of college undergraduates, Greenhaus and Badin (1974) supported Korman's (1966, 1967, 1970) contention that

performance tended to predict satisfaction only for high self-esteem subjects. Greenhaus and Badin found that task-specific self-esteem seems to be related to notions of VIE theory and to effective performance. These and other findings (Porter and Lawler, 1968; Porter, Lawler, and Hackman, 1975; and Lawler, 1973) indicates that self-esteem is a personality variable influencing outcome variables.

Chapter IV provides the scale reliabilities, factor analysis, and correlation matrix for the self-esteem scale. Exhibit B indicates the items that make up the scale. The next section looks at another individual difference variable--acceptance of a bureaucratic orientation--and its supporting evidence.

Willingness to Accept a Bureaucratic Orientation

This study conceptualizes Adorno et al.'s (1950) concept of authoritarianism as a member's willingness to accept a bureaucratic structure. Members scoring high on the three facets of this present study's measures of authoritarianism would tend to accept and be quite satisfied with a highly bureaucratic structure. On the other hand, members scoring low would tend to reject and be quite dissatisfied with that same structure.

Both Adorno et al.'s (1950) and Sandford's (1963) theory and findings support the view that a personality characteristic--authoritarianism--influences how members will react to certain stimuli.

Past research on the authoritarian personality has usually utilized Adorno et al.'s F-Scale, composed of forty-six items with eight subfactors, to measure whether a personality variable did moderate the difference between certain independent and dependent

variables. Authoritarianism in conjunction with self-esteem has been shown to moderate workers' responses to many organizational practices.

Hall (1961) provides research data on bureaucracy and its relation to other organizational characteristics. The following six factors comprise his measure of bureaucracy:

1. Authority
2. Division of Labor
3. Rules for Incumbents
4. Procedural Specification
5. Impersonality
6. Technical Competency

The first three facets of Hall's bureaucratic structure comprise a "willingness to accept a bureaucratic orientation." This is very similar to Adorno et al.'s F-Scale, but is being used because the F-Scale is outdated.

Even though the above findings are weak or stem from a different conceptual base, Adorno et al. (1950) and Vroom (1960) have indicated theoretically and empirically that individual difference variables such as an authoritarian personality moderate the relationships between certain independent and dependent variables.

The next section looks at two more individual difference factors that moderate the relationship between task structure and outcome variables--the need for achievement and need for affiliation.

Need for Achievement and Need for Affiliation

McClelland et al. (1953), McClelland (1961), and Atkinson (1964) provide the theoretical and empirical basis for the following discussion. Specifically, these researchers measured the presence

and strength of certain motives (n Ach and n Aff) through the thematic apperception test. Generally, the theory states that members with a high need for achievement or affiliation usually seek concrete feedback on performance, enjoy challenging activities, and enjoy risk situations which allow maximum satisfaction. In other words, a person is characterized as a high achiever if he is concerned with achievement and derives considerable satisfaction from striving for it. A person is characterized as having a high need for affiliation through Mowatt and Zalesnik's (1963) description of "social specialists":

People need each other for support. Feeling lonely, disliked and disrespected by people is the worst thing that could happen to a person. Living together in harmony is the ultimate value. One must work hard and do a good job in order to be accepted by others. But work should not be allowed to interfere with harmony, respect and affection. . . . Satisfaction is derived from being liked and accepted in the group. Argument and conflict are frustrating and make for an unhappy experience. (p. 123-214)

McClelland and his associates (1953, 1961) have shown that under certain conditions, need for achievement and need for affiliation can be important motivators in work organizations. Overall, research seems to suggest that need for achievement is likely to stimulate workers to perform moderately challenging tasks. The research of Murray (1938), on the potential moderating effects of need for achievement on the attitude-performance relationship provides the lead to this present research.

Johnson and Stinson (in press), in a study of military officers, civil service personnel, and project engineers, indicate that need for achievement moderates the relationships between intersender

role conflict and satisfaction, and role ambiguity and task assignment and satisfaction. Specifically, they indicate that need for achievement has a significant effect on the relationships between ambiguity of task assignment and both overall and intrinsic satisfaction. Johnson and Stinson's data were trichotomized on the basis of need for achievement and need for independence ratings. They analyzed correlations between role and satisfaction scores; comparable correlations for groups with similar and dissimilar personality variables were tested for significance of individual differences. Their study found no moderator effect between either person-role conflict or feedback ambiguity and satisfaction. However, Johnson and Stinson's research adds credence to the evidence cited above that need for achievement acts as a moderator between role-task variables and satisfaction.

In a study comparing need for achievement between college students, small business managers, and corporation managers, South (1974) found that correlations were significantly lower for the student sample. This suggested that the n Ach construct may be less differentiated among older managers.

Litwin and Stringer (1968) found job satisfaction to be highest in workers with a high need for affiliation, low in workers with a high need for power. Findings such as these suggest that satisfaction may be an outcome of different types of task structure moderated by individual differences.

In support of the findings of Atkinson and Reitman (1956), French (1958), Steers (1975b), and Steers and Porter (1974) who

found that n Ach demonstrated moderating effects on factors which have been shown to affect job performance, Steers (1975a) found that need for achievement has an impact on the relationship between attitudes and performance. Specifically, Steers found a positive relationship between job involvement and job satisfaction and two performance dimensions for high n Ach subjects, and no relationship for low n Ach subjects. These findings are consistent with Hackman and Lawler's (1971) findings that individuals with high need strength demonstrate stronger satisfaction-performance relationships than those with lower needs. However, rather than using Maslow's (1954) theory of motivation as a base, Steers utilized Murray's (1938) theory of need for achievement as an intervening or moderator variable in personality terms.

However, like Triandis (1959), Steers (1975a) points to the fact that n Ach effects on attitudes and performance were weak but significant; consequently, he suggests that other important intervening variables affect the attitude-performance relationship.

In summary, the need for achievement and affiliation has been shown to have a positive relationship to outcome variables. In addition, the data indicate that these two individual difference variables moderate the relationships of various attitudes and performance; however, they clearly are not the only intervening variables.

Personal or Demographic Variables

Past research has indicated that personal or demographic characteristics such as age, sex, type of socialization, plant

location, etc. affect various outcome variables. A summary of this research can be found in Vroom (1964) and Quinn et al. (1974). Given these sources, this section will provide a brief review of the demographic variables acting as intervening variables between the independent and dependent variables. This study asserts that these types of variables along with internal personality characteristics of an individual are moderators.

However, the theory linking demographic, personality, organizational, and role-task variables is nonexistent. Many correlational studies have been shown (see Herman and Hulin, 1972; Herman et al., 1975) that demographic variables are important indicators of organizational relationships. However, a weakness of such studies is the spurious relationships which exist because of confounding variables. Due to methodological limitations, it is presently impossible to investigate multiple combinations of personality, demographic, and task structure facets interactional relationships on outcomes. In addition, the linking of demographic variables with other organizational correlates is rarely practiced in organizational research. Consequently, this study will employ partial correlation in testing for significance of demographic variables.

Wild and Kempner (1972) found that members from urban settings are more disposed to accept paced work than are those from rural areas. Thus, they contend that urbans would respond less positively to job enlargement methods.

White and Ruh (1973) did not find the hypothesized moderating effects of personal values on the relationship between participation

and job attitudes to be significant. In contrast with White and Ruh, Hulin and Blood (1968), Blood and Hulin (1967), and Turner and Lawrence (1965) cite evidence that demographic characteristics influence outcome variables. White and Ruh indicate some methodological weaknesses on the part of this earlier research:

In these studies, however, employee value systems were not measured directly; individual differences in employee value systems were inferred from characteristics of plant location such as the degree of urbanization and the presence of slum conditions. (p. 507)

Recently, Fossum (1974) found that rural persons tended to be more satisfied with their pay and with performing a repetitive task than were urban subjects. In support of Fossum, Hulin and Blood (1968) found that rural workers were more likely to hold values of the Protestant work ethic and were therefore more likely to be more receptive to job enlargement programs that would result in greater responsibility. On the other hand, urban workers viewed their jobs as a means of financial gain only. Turner and Lawrence's (1965) findings are similar to those of Hulin and Blood, and Fossum.

Smith (1955) indicated that the tendency to perceive repetitive tasks as boring was associated with such factors as youth, restlessness in daily habits and leisure time activities, dissatisfaction with personal, home, and plant situations and was not directly concerned with uniformity and repetitiveness of task structure.

Slocum and Topichak's (1972) results indicate that cultural differences between Mexicans and their American counterparts had a significant effect on their levels of satisfaction. This cross-cultural study found Mexican employees to be more satisfied than Americans.

Most psychological studies seem to indicate that older people are generally more satisfied on their jobs than younger people (Form and Geschwender, 1962; Rachman and Kemp, 1964). Salinas (1964) found satisfaction with pay to be positively related to the age of employees. Similarly, Hoppock's (1960) case study found that after twenty-seven years of employment, people experienced higher overall satisfaction than they did in earlier working years.

Summary of Individual Difference Variables Acting as Moderators
Between Task Structure and Outcome Variables

This study's independent, moderator, and dependent variables have been reviewed in a variety of studies (see Table 1). However, these studies have not generally included formal organizational attitudes and behavior. Research approaches to the intervening role of personality in organizations have been generally confined to personality variables which are specifically organizationally related. Particularly important among these variables are the motives which bind an individual to a particular organization and affect his or her output. These motivation or individual difference variables have been examined in two distinct ways by various organizational theorists.

Classical theorists, represented by Taylor (1911) and Gulick and Urwick (1937), propose an administrative management theory of personality which does not consider individual differences. Such a theory assumes that the desired behavior may be obtained by determining the one factor which determines all behavior, and gearing

rewards to the "typical" organization member. March and Simon (1958) comment on this assumed "constant" rather than "variable" construct:

First, in general there is a tendency to view the employee as an inert instrument performing the task assigned to him. Second, there is a tendency to view personnel as a given rather than a variable in the system.

Although there are some exceptions in the literature, the grand theories of any organizational structure have largely ignored factors associated with individual behavior and particularly its motivational bases. (p. 29)

In contrast to those theories in which individual factors are entered as constants are the newer and more complex approaches of March and Simon (1958), Cyert and March (1964), Likert (1961, 1967), Porter and Lawler (1968), and Lawler (1973). These theories give considerable emphasis to personality differences. But while the importance of considering an individual member's particular combinations of needs, traits, and perceptions is emphasized, little attention is given to the particular dimensions or needs, traits, or perceptions which are held to be relevant to such consideration. In summary, it seems the search for the individual within the organization has generally tended to bypass any systematic description of organizationally relevant individual differences. An exception is the testing and selection literature exemplified by Guion (1965).

In order to begin to study the interaction of different personality variables with different job characteristics, the researcher is confronted with two poorly coordinates sets of data. Kahn et al. (1964) characterize these as follows:

First, one possesses from personality psychology a number of reliably measurable personality dimensions shown in extensive research to be behaviorally relevant in a wide variety of environmental settings.

Second, one possesses a variety of organizationally oriented approaches to personality which have eschewed these very dimensions in favor of considering constellations of individual motives for working. (p. 310)

Furthermore, Kahn et al. cite two fundamental techniques for coordinating these available resources into a study of organizational behavior:

1. . . .the wholesale appropriation by organizational studies of those personality variables which have previously proved fruitful in personality studies carried on in other environmental situations.
2. . . .a complementary technique, taking as its starting point motivational variables suggested by an organizationally slanted approach to personality. (p. 310)

This study agrees with the latter approach, that of taking suggested individual needs, operationalized as personality variables, based upon organizationally slanted approaches to personality, as moderators of task structure and certain outcome variables.

The last section of Chapter II presents a limited review of the derivative outcomes, the three facets of satisfaction and the propensity to leave, associated with the interactional model presented in Diagram I.

The Outcome Variables

Over forty years of theoretical and empirical verification support that certain facets of satisfaction (overall, pay and job) are legitimate, of practical importance to managers, and scientific-

cally important outcomes for organizational study; this study utilizes these outcomes as dependent variables (Brayfield and Crockett, 1955; Herzberg et al., 1957, 1959; Vroom, 1964; Schwab and Cummings, 1970; Stogdill, 1972; and Porter, Lawler, and Hackman, 1975). This study identifies these outcomes as the consequences of the interaction between the facets of task structure and the seven individual differences. As mentioned previously, the variables originating from these satisfaction outcome variables are not part of this research.

The early Institute for Social Research studies of Katz, Maccoby, and Morse, 1950; Katz, Maccoby, Gurin, and Floor, 1951; and Morse, 1953 which identified four separate dimensions of satisfaction [(1) intrinsic job satisfaction; (2) company involvement; (3) financial and job status satisfaction; and (4) pride in group performance] led Stogdill (1965) to develop his Job Satisfaction and Job Expectations Manual. Stogdill performed a factor and reliability analysis and found three scales (overall satisfaction identified as satisfaction with management, company, and recognition; pay; and job satisfaction) to exhibit high internal reliability and be factorally independent.

Stogdill's scales of overall, pay, and job satisfaction were utilized in the investigation of this study's dependent variables. Other researchers (Organ and Green, 1974a and 1974b) have supported this use of these concepts as dependent variables in studying worker attitudes.

In order to obtain a measure of turnover, this study defined it as perceived behavioral outcome measured by a perceived propensity to leave measure. This dependent variable is a theoretically based and empirically verified outcome variable in organizational research (Vroom, 1964; Porter and Lawler, 1968; Rizzo, House, and Lirtzman, 1970; Lyons, 1971; and Stinson and Johnson, 1975). Significant relationships between role conflict and role ambiguity, perceived propensity to leave, and job performance have been reported. Rizzo, House, and Lirtzman (1970) and Lyons (1971) found significant relationships between role ambiguity and expressions of the desirability and likelihood of leaving the job. Lyons obtained a significant relationship between role ambiguity and voluntary turnover, and Johnson and Graen (1973) obtained significant relationships between both role ambiguity and role conflict, and voluntary turnover. Lyons study of 156 nurses from several community hospitals found greater and significant relationships between role clarity and job satisfaction, propensity to leave and voluntary turnover for individuals classified high in need for clarity than individuals classified as low in need for clarity.

Kerr (1972) used a similar measure (perceived ability and willingness to leave) to show that individuals who claim high ability and willingness to leave the organization will think and act substantially as cosmopolitans, while those low in ability and willingness to leave will behave like locals.

A scale measuring propensity to leave the organization was developed utilizing the concept of the above researchers. This scale measures voluntary turnover as an outcome of the interaction between the facets of task structure and the seven individual difference variables.

As before, the scale reliabilities, findings from factor analysis, and inter-correlation between items are presented in Chapter IV. Exhibit B details the items in the propensity to leave scale.

CHAPTER III

HYPOTHESES AND DESIGN

The major concern of this chapter is the presentation of the research hypotheses that were derived from the theoretical and empirical evidence discussed in the previous chapter and the design of the field study. In addition, Chapter III will discuss the design and construction of the questionnaire, sample sizes and their characteristics, the conduct of the field study and limitations and assumptions of the study.

Research Hypotheses

From Diagram I presented in Chapter II, which specified the conceptual interactional model, specific theoretical considerations and empirical evidence have been presented in the remainder of Chapter II to support the following hypotheses:

Null Hypothesis 1: There will be no individual differences that moderate the association between task structure and the facet satisfactions.

Alternate Hypothesis: The association between the different facets of task structure and the facet satisfactions are moderated by:

- 1-a: Internal-External Life Orientation
- 1-b: Self-Esteem
- 1-c: Willingness to Accept a Bureaucratic Orientation
 - 1. Hierarchy of Authority
 - 2. Division of Labor
 - 3. Rules for Incumbents

1-d: Need for Achievement

1-e: Need for Affiliation

Null Hypothesis 2: Holding individual differences constant, there will be no association between task structure and the facet satisfactions.

Alternate Hypothesis: The positive association between task structure and the facet satisfactions, holding individual differences constant, will depend upon one or more of the following:

2-a: Autonomy

2-b: Skill Variety

2-c: Task Feedback

2-d: Task Identity

2-e: Upward Influence

Null Hypothesis 3: Holding individual differences constant, there will be no association between task structure and propensity to leave the organization.

Alternate Hypothesis: The negative relationship between task structure and propensity to leave, holding individual differences constant, will depend upon one or more of the following:

3-a: Autonomy

3-b: Skill Variety

3-c: Task Feedback

3-d: Task Identity

3-e: Upward Influence

Null Hypothesis 4: Holding individual differences and task structure constant, there will be no association between the demographic variables and the outcome variables.

Alternate Hypothesis: The positive association between the demographic variables and the outcome variables, holding individual differences and task structure constant, will depend upon one or more of the following:

4-a: Age

4-b: Sex

4-c: Socialization (Rural or Urban)

- 4-d: Wage Classification (Job Level)
- 4-e: Education
- 4-f: Company Tenure

The Field Study

The data necessary for measurement of the sixteen variables were obtained by means of a field study of two samples (industrial and service) combined into one sample utilizing this dissertation's pretested scales and other reliable scales from other empirical research. The purpose of this section is to look at the study design, questionnaire construction and design of the pretest and final questionnaire, sample sizes and their characteristics, conduct of the field study, and limitations and assumptions of the study.

Study Design

Two basic designs are available for social-psychological investigation: experimentation versus nonexperimental research and laboratory versus field research. From these two general classifications, research design may be divided further into four additional categories: laboratory experiments, field experiments, field studies, and survey research (see Runkel and McGrath, 1972; Weick, 1965; Evan, 1971; W. Scott, 1965; Seashore, 1971; and Barnes, 1967). It seems, however, the most important distinction is between lab experimentation and field studies. According to Barker (1965), a field study in which the researcher acts as a "transducer" in order to observe true or natural behavior, is

superior to a lab experiment, in which the investigator's intent is to disturb the behavioral system through control or manipulation. Blau and Scott (1962) indicate that the field study is the typical design employed to study social or psychological phenomena within organizations and that it is particularly well suited "for providing an overall picture of the organization and information about the interdependence of its constituent parts" (p. 20). As discussed later in this section, two organizations were involved in the study with comparisons between individual differences in a combined sample affecting the generalizability of the findings.

Social-psychological research methods also may be classified as to the specific techniques used to gather the data. In general, the retrieval or observation of phenomena within real-world behavioral systems is restricted to three basic methods: direct observation, analysis of documents and records, and interviews (Blau and Scott, 1962, p. 20). Subdividing the interviewing method, there are structured interviews and self-report questionnaires. A self-report questionnaire (i.e., Exhibit A) was utilized in this study. There have been many pros and cons written concerning the use of a self-report questionnaire, but Festinger and Katz (1953) state the psychological view as follows:

In short, if the focal data for a research project are the attitudes and perceptions of individuals, the most direct and often most fruitful approach is to ask the individuals themselves...Observational methods are less likely to be useful for the measurement of attitudes and perceptions and are obviously unable to probe the past or to determine an individual's intentions for the

future. The criteria of directness and economy and the ability to collect data about beliefs, feelings, past experiences, and future intentions have widened the range of the application of the interview...In summary, the interview and the questionnaire appear as powerful instruments for social research...Perceptions, attitudes, and opinions which cannot be inferred by observations accessible through interviews (p. 330-331).

The above statement in conjunction with Porter and Lawler's (1968) statement below concerning correlational studies lends strong support to the use of questionnaires and correlational techniques for gathering and analyzing perceptual data:

The major disadvantage, from our point of view, of a correlational study is its inadequacy to prove directly the existence of the cause and effect relationships that are specified in a conceptual model. A correlational study can, however, establish whether two variables tend to be related at a fixed point in time...On the other hand, if no relationship were to be found where the model predicts one should exist, then it is possible for a correlational study to disprove part of the model. Thus, correlational studies can sometimes disprove but never prove that a causal relationship exists (p. 41).

Furthermore, Blalock (1964) indicates the following statements concerning all social science investigations:

...we can never actually demonstrate causal laws empirically. This is true even where experimentation is possible. Causal laws are working assumptions of the scientist involving hypothetical statements of the if-then variety...The notions of direct and indirect causes are defined as relative to the particular variables included in the system. If other variables were to be included, the causal model might have to be changed. There is thus no single "correct" model that can be demonstrated to be superior to all others (p. 172-173).

The above sets of statements are particularly important to this study since the variables subject to investigation concern perceptions, involve correlational techniques, and offer only limited

opportunity to infer causality because of the inadequacy to prove directly the existence of the cause and effect relationship.

However, while there are a number of limitations to self-report measures and correlational analyses, it may be concluded that they are reasonably accurate and reliable methods for the study of individual differences across on-going behavioral systems at one point in time. Except, of course, where a certain variable cannot influence the other (i.e., satisfaction cannot change age).

Questionnaire Construction and Design

As mentioned previously, a pretest questionnaire was administered from January to April, 1974 in Ohio to 424 employees from eleven different organizations. Within the pretest sample, eighty (337) percent were hourly, eleven (48) percent were salaried-exempt, nine (35) percent were salaried-nonexempt, and the remaining four respondents were discarded because of insufficient information. The pretest questionnaire was designed for the Ohio Quality of Work Institute located in Columbus, Ohio. The writer was able to gather pretest data and perform scale reliabilities and confirmatory factor analysis (i.e., results shown in Chapter IV) through the cooperation of this organization and its director, Mr. Neil Q. Herrick. The average length of time to complete the total pretest questionnaire was approximately forty-six minutes. The nine (i.e., autonomy, skill variety, upward influence, internal-external life orientation, hierarchy of authority, division of labor, rules for incumbents, need for achievement, and need for affiliation)

scales, their pretest reliabilities, and their inter-item correlations among the scale items are depicted in Exhibit C. This exhibit indicates those items that were dropped from the pretest questionnaire based upon Kuder-Richardson (K-R) reliability coefficient No. 3 (1937) which was modified by The Ohio State University Data Center (1973) to accommodate Likert-type scales. In addition, the pretest scales were factor analyzed to investigate scale independence or unidimensionality. Based upon these two analysis techniques, the study's questionnaire (Exhibit A) was constructed. In addition to the K-R reliability coefficients and intercorrelations presented in Exhibit C, Chapter IV is devoted to the question of pretest versus combined study sample K-R scale reliability coefficients and unidimensionality of scale construction.

Exhibit B (the variable listing) indicates the specific item description of the five task structure scales, the seven individual difference measures, the demographic variables, and the four outcome variables. Exhibit E, a missing data correlation matrix, is provided to show the inter-item correlations for each item that comprises a scale. This exhibit divides the correlations into three categories: 1) the pretest sample; 2) the XYZ Valves sample; and 3) the Beth sample. From this exhibit, it is possible to look at the change in the scale inter-item correlations from one sample to another. It is of importance to note that there was variance between the two samples in relation to inter-item responses. Another missing data correlation matrix, Exhibit F,

presents these same scales and their respective inter-item correlations for the combined study sample N of 1,409. As stated within Exhibit B, seven scales (i.e., task feedback, task identity, self-esteem, overall satisfaction, pay satisfaction, job satisfaction, and propensity to leave) were drawn from other empirical organizational research. All of these scales had proven in past research that their items and their respective scales possessed sufficient discriminatory power. These scales, like the pretest scales, are re-examined for confirmatory validity of their discriminating power in Chapter IV.

Sample Size and Characteristics of the Sample

Data were gathered through the cooperation of two organizations. The organizations were named the "XYZ Valves" sample and the "Beth" sample for reasons of confidentiality of data. The XYZ Valves is the industrial sample and the Beth organization is the public sector sample.

The XYZ Valves sample is located in a large urban, Southwestern portion of the United States with a sample N of 1,003 employees. The following table provides an analysis of the work force at the Southwestern industrial plant by wage classification and sex.

The XYZ Valves organization is a semi-skilled manufacturing facility with unit and small batch technology (Woodward, 1965). Most of the hourly jobs are Class IV, III, II, or I skilled machine operators.

Table 2: Industrial Work Force Analysis
by Wage Classification and Sex

SEX	WAGE CLASSIFICATION									
	Hourly		Non-Exempt		Exempt		Executive		Totals	
	No.	%	No.	%	No.	%	No.	%	No.	%
Female	31	25*	84	70*	6	5*	0	0*	121	100
Male	576	65*	80	10*	208	23*	18	2*	882	100
Total in Category	607		164		214		18		1003	

*Percentage in the classification of total employment

The Beth organization sample is a fourteen year old non-profit hospital located in a medium size rural Ohio community. The unit is a 361 bed county non-profit hospital with 670 employees. The following table provides an analysis of the work force at the public sector organization by wage classification and sex.

Beth respondents ranged from the chief administrator and his seven associate administrators of the hospital through nurses, technicians, and aides.

The total possible sample size for the dissertation from both organizations was 1,682. It was considered necessary that two organizations, one from the private and one from the public sector, compose the study to provide a variance across a number of different jobs. Therefore, adding to the potential generalizability of the study's findings. This is an improvement over Hackman and Lawler (1971), Wanous (1974) and other researchers whose findings have been limited to a small subset of jobs or levels. Each organization is to a certain extent unique at a single point in time and to that extent it may differ from other organizations concerning a number of the interactional variables. Thus, a sample consisting of more than one organization and from more than one sector offers greater potential opportunity for generalization of the research findings. Exhibit K provides the detailed demographic characteristics of the combined study sample.

As mentioned previously, a study sample N of 1,409 was obtained (861 from XYZ Valves and 548 from Beth). The response rate of 84%

Table 3: Public Sector Work Force Analysis
by Wage Classification and Sex

SEX	WAGE CLASSIFICATION					
	Hourly			Administration		
	Main- tenance	Admin.	Nursing	Admin.	Super- visory	Totals
Female	1	182	356	1	26	566
Male	19	62	11	7	14	113
Total in Category	20	244	367	8	40	679

is considered average for a study being conducted in tandem with a study by the Institute for Social Research at The University of Michigan.

Conduct of the Field Study and Administration of the Questionnaire

The initial contact with each organization consisted of discussion with the personnel manager and the operating head of the organizational unit participating in the study. These discussions focused on the research objectives, questionnaire item content, the population sample, and the procedures for administration of the questionnaire and on-site feedback of the findings. Many follow-up sessions were held in order to establish trust, questionnaire administration schedules, and physical arrangements for taking the the self-report questionnaire on company or hospital time.

The questionnaire was administered on-site to all subjects in September and October, 1974 by the writer and his research associates from the University of Michigan, Institute for Social Research (ISR). The organizations provided on-shift paid work time, a clean and noise free conference room, and complete cooperation. The researchers handed out the questionnaire and answered questions pertaining to meaning, wording, etc. The questionnaires were collected on-site and the respondents were guaranteed complete confidentiality as their individual employee identification number was indicated on the front of the questionnaire. Before administration of the questionnaire, the writer conducted interviews with over three percent of the sample in connection with a parallel

study being conducted by ISR. This added to the trusting relationships which developed between the study and the respondents. In addition, the questionnaire was administered on a voluntary basis and no one from the participating organizations participated in the administration of the questionnaire. Fourteen questionnaires from respondents were discarded for insufficient data and seven subjects were identified as being unable to read. These twenty-one questionnaires were not included in the data and are exclusive in the total N.

The last section of Chapter III addresses itself to the limitations and assumptions of the study.

Limitations and Assumptions of the Study

The major limitations of the field study are those associated with the research design, including the scales utilized to measure the variables; the population from which the data was obtained; and the appropriateness of the statistical methodology to test each of the hypotheses.

The first set of limitations address themselves to the weaknesses of the study design. Although the field study with its large N across two organizational boundaries from two different sectors is from the real world making it strong on realism, providing psychological as well as practical significance, and is theory oriented, it offers limited opportunity to infer causality. Blalock (1964) indicates to have a cause and effect relationship among variables, three requirements must be satisfied. To prove

that X causes Y, for example, it must be demonstrated that a high degree of association exists between X and Y, that X precedes Y in time, and that all other potential causes of Y have been eliminated. The research design provides the opportunity to satisfy the first requirement. However, because of the likelihood of confounding variables, the evidence provided by the study may be insufficient to present a concrete case for existence of a certain time-order relationship among variables. As mentioned previously, no provision was made for eliminating all other potential causes of variance in Y, the dependent variable. But as Blalock indicates, researchers "can never actually demonstrate causal laws empirically" (1964, p. 172). While the field study is an improvement over past research, it does limit causality inferences.

Of course, the second limitation which is associated with all self-report field studies concerns the use of questionnaires. However, as previously mentioned, the use of questionnaires is the most useful method for collecting information relative to individual's attitudes and perceptions. A major advantage of this dissertation questionnaire is its ability to measure the interactional effects between personality and structural variables. In addition, the internal reliabilities of all items pertaining to a particular scale have been verified as being acceptable for research purposes except for self-esteem.

An additional limitation to the study concerns the sample from which the data was obtained. The ability to generalize the research findings with a high degree of accuracy is limited to two organi-

zations. However, the research design enabled the collection of data from executive to an operative level. In addition, drawing the research sample from different organizations in the private and public sectors enables the findings to be applicable to other levels and other organizations of a similar nature and environment.

The final limitation involves the critical assumptions upon which the statistical techniques employed by this study are based. The findings of the study are limited to the extent that these assumptions are met. The MCA technique, previously mentioned, can be categorized as a combination of a complex analysis of variance with unequal cells specifically designed to detect interaction effects and a special form of multiple regression utilizing dummy variables. The program's two principle limitations are: the analytical model and the interactive procedure the program uses to solve the normal equations required by the model. Basically, the MCA technique assumes that the dependent variable is predictable from an additive combination of the predictor variables. Both of the above limitations arise from the additive assumption of the model.

In addition to the limitations connected with MCA, the other statistical technique employed in this study--that of partial correlation--has certain limitations associated with it. If inferences are to be drawn from the statistics produced by partial correlation, then it is necessary to assume that the variables are from a multivariate normal distribution. This implies three important sub-assumptions: (1) all variables are normally distributed, all pair-

wise joint events are bivariate normal, and so on; (2) the variables are homogenous (i.e., they have equal variances of random errors); and (3) the relationships among the variables are linear. Necessarily, to analyze any conceptual model is the assumption that the same form of data (i.e., perceptions) is interpretable from two or more persons or groups. Correspondingly then, the data must be equivalent and interchangeable. Equally relevant is the assumption of unidimensionality of dimension space. That is--no more, no fewer--exactly one dimension is relevant to the relations among the factors and variables.

For this study, the major limitation is the assumption that members react to their organization on the basis of their perceptions of it. These perceptions are based on individual member's needs, motives, and value systems.

CHAPTER IV

MEASUREMENT OF THE VARIABLES IN THE INTERACTIONAL MODEL

Measurement of the Variables

This chapter is concerned with the explanation of how each of the sixteen variables in the study were constructed and measured. Specifically, this chapter addresses the questions of scale reliability, unidimensionality of scale construct, sampling adequacy, comparable scale results from other empirical research, and the intercorrelations among the variables in the interactional model.

Of the sixteen variables in the interactional model depicted in Diagram I and measured by the study's questionnaire (Exhibit A), the following nine variables were pretested and analyzed for scale reliability and independence of scale construct prior to administering the study's questionnaire:

A. INDEPENDENT VARIABLE: FACETS OF TASK STRUCTURE

1. Autonomy
2. Skill Variety
3. Upward Influence

B. MODERATOR VARIABLES: INDIVIDUAL DIFFERENCES

4. Internal-External
5. Hierarchy of Authority
6. Division of Labor
7. Rules for Incumbents
8. Need for Achievement
9. Need for Affiliation

The other seven variables (two facets of task structure: task feedback and task identity; one individual difference: self-esteem;

and the four outcome variables: overall satisfaction, pay satisfaction, job satisfaction, and propensity to leave) were taken from past empirical research assuming scale reliability and independence of scale construct. Exhibit J presents the sixteen variables, their conversion computer index, and the items that were reflected.

A Kuder-Richardson (K-R) internal scale reliability analysis utilizing a K-R No. 3 was performed on the nine pretest scales and the sixteen study sample scales (Kuder and Richardson, 1937). The basic K-R No. 3 formula was modified to accommodate multiple scales with a version of Cronbach's coefficient alpha (Cronbach, 1951) added by The Ohio State Data Center (1973), College of Administration Science, Number C6.03.012. In addition, a separate coefficient alpha program from the Institute for Social Research was performed to add validity to the above K-R No. 3 findings. For this study, like Nunnally (1967) and Guilford (1973), internal consistency could contribute to the paucity of clear relationships with that scale.

Beyond internal scale reliability, a Principal Factor(s) Solution, SPSS version, was performed on the nine pretested scales. For comparison purposes, a Principal Factor(s) Solution (Gorsuch, 1974, p. 85; Harman, 1967, p. 135+), which allows for communalities to be determined interactively and eigenvalue of (1.0), was performed on the sixteen study sample scales. This is shown in Exhibit D.

More generally, by the method of Principal Factor(s) Solution "is meant that the application of principal components to the

reduced correlation matrix (i.e., with communalities) in place of the ones in the principal diagonal" (Harman, 1967, p. 137). A minimal eigenvalue (value K) was used as the minimum value which an eigenvalue must attain in order for its associated factor(s) to be outputed. Harman (1967, p. 135⁺) indicates this method to be correct. Hakel (1974) and Schneider and Alderfer (1973) add credence to this method and decision rule. The Principal Factor(s) Solution performed on the pretest sample used (0.0) as the eigenvalue.

The next sections of this chapter take each independent, moderator, and dependent variable separately and investigate its scale reliability and construct validity.

Internal Scale Reliabilities of the Five Facets of Task Structure

Vroom (1960), Turner and Lawrence (1965), and Hackman and Lawler (1971) provide the basic scale construction and development for the five task structure facets of autonomy, skill variety, task feedback, task identity, and upward influence. More recently, Hackman and Oldham (1974), Hackman and Oldham (1975), and Sims and Szilagyi (1974) have verified the adequacy of the internal reliabilities of four (excluding upward influence which was not tested) of this study's facets of task structure.

Table 4 on the following page presents the internal reliabilities of the above researchers, who used similar if not exact items across approximately 2,200 workers from various industrial and public sector settings. These researchers' average internal reliabilities for the five facets of task structure were: .74 for autonomy;

Table 4: Internal Scale Reliabilities of the
Five Facets of Task Structure

Task Structure Facets	Source of Ratings						
	Vroom (1960)	Turner & Lawrence (1965)	Hackman & Lawler (1971)	Sims & Szilagyi (1974)	Hackman & Oldham (1974)	Pretest Sample	Study Sample
Autonomy	--	.89	.68	.74	.66	.58	.66
Skill Variety	--	.86	.91	.80	.71	.65	.70
Task Feedback	--	.97	.75	.80	.71	--	.69
Task Identity	--	.95	.77	.77	.59	--	.62
Upward Influence	.61*	--	--	--	--	.87*	.89

* NOTE: Vroom's (1960) scale of four items modified into the Pretest Scale Upward Influence of fifteen items.

.82 for skill variety; .81 for task feedback; .77 for task identity; and .61 for upward influence (not averaged). Results from the pretest sample and this study's sample of 1,409 are indicated in Table 4.

The results are quite satisfactory for internal reliabilities and compare quite favorably with prior research as indicated by Table 4. Exhibit C presents the inter-item reliabilities of the complete pretest and reduced pretest scales. As a further basis of comparison and internal scale comparability, Table 5 presents the different characteristics of each of the above researcher's samples and their methods for obtaining internal consistency. Exhibit B provides the actual items that makeup the five facets of task structure. To add further evidence pertaining to internal consistency of the five facets of task structure, Exhibit E and Exhibit F respectively present the inter-item scale correlations of the pretest versus the separate industrial and hospital samples with the combined study sample. Exhibit G provides summary scale data regarding the five facets of task structure. Exhibits E and F support Hackman and Oldham's (1974) and Hackman and Lawler's (1971) findings that the individual items of task structure are moderately to highly intercorrelated.

Independence of the Five Facets of Task Structure

As far as construct validity or unidimensionality of the five facets of task structure is concerned, Hackman and Oldham (1974) state the internal consistency reliabilities range from a high of

Table 5: Characteristics of the Samples and Method
for Obtaining Scale Reliabilities for the
Five Facets of Task Structure

Researcher	Sample N	Population Sector	Reliability Method
1. Vroom (1960)	108 (supervisory)	1 company (New York & Chicago delivery firm)	Test-Retest reliability
2. Turner & Lawrence (1965)	470 (hourly, supervisory)	11 industrial companies (47 jobs)	Estimated reliability of the average of two judges correlated by Spearman-Brown
3. Hackman & Lawler (1971)	270 (208 hourly, 62 supervisory)	1 company (telephone operators, installers, etc.) (13 jobs)	Spearman-Brown Prophecy Formula Correction of Kuder-Richardson No. 20
4. Sims & Szilagyi (1974)	732 (administration, professional, technical, clerical, service classification; 79% hourly)	Medical-hospital complex (one location in Midwest)	Split-half with Spearman-Brown Prophecy Formula Correction
5. Hackman & Oldham (1974)	658 (hourly, supervisory)	7 industrial and service organizations (62 jobs) East, Midwest, and Southeast	Median inter-item correlation adjusted by Spearman-Brown
6. Pretest Sample	424 (hourly, supervisory)	Majority from industrial section with some from public service (11 sites in Ohio)	Kuder-Richardson No. 3 with modification for multiple scales
7. Study Sample	1,409 (hourly, non-exempt, exempt, exempt-supervisory, and executive)	1 industrial firm in Southeastern Texas, and 1 non-profit hospital in Ohio	Kuder-Richardson No. 3 and Cronbach Coefficient Alpha

.71 (skill variety and task feedback) to a low of .66 (autonomy).

The median off-diagonal correlations are: (1) skill variety - .19; (2) task identity - .12; (3) autonomy - .19; and (4) task feedback - .19 (p. 18). The median off-diagonal correlation is the median correlation of the items scored on a given scale with all of the items scored on different scales of the same type. Thus, the median off-diagonal correlation for skill variety (.19) is the median correlation of all items measuring skill variety with all items measuring the other three facets of the task. Concerning the intercorrelations of the four facets of task structure, Hackman and Oldham state:

The job dimensions are moderately intercorrelated, as has been previously found (Hackman and Lawler, 1971). Again, this is to be expected if it is assumed that "good" jobs often are good in a number of ways--and "bad" jobs often are generally bad. There is no a priori reason to expect that the job dimensions would or should be completely independent, and a moderate level of intercorrelation among them does not detract from their usefulness as separate job dimensions--so long as the fact of their non-independence is recognized and accounted for in interpreting the scores of jobs on a given job dimension (1974, p. 26).

From the above data, Hackman and Oldham suggest the results of the internal consistency reliabilities of the scales and the discriminant validity of the items are satisfactory.

Recently, Sims and Szilagyi (1974) investigated Hackman and Lawler's (1971) core dimensions of autonomy, skill variety, task feedback, and task identity for construct validity and external validity. The following techniques were utilized to determine validity of scale construct:

1. Construct Validity - Factor analysis using SPSS varimax rotation with a factor congruency coefficient (Harman, 1967, p. 270) between the appropriate factors of the subgroups and the total population.
2. External Validation - Analysis of Variance and Spearman Rank Correlation as indicated below:
 - a) Convergent and discriminant analysis (Campbell and Fiske, 1959).
 - b) Multiple Discriminant Analysis (MDA) found in Nunnally (1967). [MDA is a statistical technique used to classify an observation into one of several a priori groupings dependent upon the observations individual characteristics.]

Sims and Szilagyi (1974) findings concerning the four facets (excluding upward influence) were:

1. Construct Validity: factor solution was readily interpretable and meaningful loadings were obtained beyond the cutoff level of .40.
2. External Validity: a) all convergent validity coefficients were significant at the .001 level; b) coefficient of concordance, w , was .25, which was significant at the .10 level; c) MDA was successful in demonstrating that the job dimensions can discriminate between occupational groups (p. 11-16).

In summary, Sims and Szilagyi found validity and reliability for the four indicated facets of task structure to appear quite

good. Generally, the scales were shown to possess acceptable internal and external validity.

As part of the scale construction and measurement of the facets of task structure, a Principal Factor(s) Solution was performed on both the pretest and the study sample's facets of task structure. Exhibit D presents the findings from the factor analysis. In general, the pretest findings of multiple factors associated with each scale construct indicates the facets are not independent. Autonomy, skill variety, and upward influence had two factors outputted from each scale construct. However, as indicated in Exhibit D, each study sample measure of the five facets of task structure had one factor outputted and all the loadings were above the cutoff of .30 (Nunnally, 1967, p. 303). Nunnally indicates that factor loadings below .30 are uninterpretable, unstable, and non-replicable. This study utilizes the cutoff of .30 as the minimum adequate loading for a sample variable or item on a factor.

It should be mentioned that the decision rule of (1.0) as the Principal Factor(s) Solution's eigenvalue influences the factor structure of the task structure facets unidimensionality. If a (0.0) is used as the eigenvalue, only the facets of task feedback and task identity can be labeled independent scales or constructs. The other three facets of task structure all load on two factors under this eigenvalue criteria.

In addition, the Kaiser-Meyer-Olkin measure of sampling adequacy (Kaiser, 1970) was performed on each of the five facets

of task structure. The Kaiser statistic provides an indication of whether a particular variable(s) "belongs to the family" psychometrically. The measure of sampling adequacy lies between zero and (1.0). The results of the Kaiser statistic indicating sampling adequacy for the facets of task structure is shown in Table 16 located at the end of this chapter.

In summary, the results from:

1. the Kaiser statistic indicating acceptable sampling adequacy and
2. the findings from the Principal Factor(s) Solution with (1.0) used as the eigenvalue criteria presenting a factor solution that was readily interpretable and whose meaningful loadings were beyond the cutoff of .30

seems to indicate the study's independence of scale construct. Furthermore, it supports Sims and Szilagyi (1974) findings of construct validity. However, the fact that this independence rests with the factor analysis method selected and its corresponding eigenvalue must be observed. Nevertheless, this finding is based upon the assumptions corresponding to the factor method selected and should not detract from the usefulness of the five facets of task structure as separate job dimensions.

Internal Scale Reliabilities of the Seven Individual Difference Variables

Of the seven moderating variables in Diagram I, all variables except self-esteem were pretested. The pretested internal reliabilities and their inter-item correlations are shown in Exhibit C. Exhibit B presents the actual items that comprise each of the scales.

The before mentioned K-R No. 3 internal consistency program was utilized to determine the pretest and the study sample's internal scale reliability coefficients. Exhibit D presents the pretest and study factor analysis findings. Exhibit E and Exhibit F indicate the inter-item correlation matrix of each scale. Exhibit H shows the summary scale data regarding each of the individual difference scales.

Even though some of these internal reliabilities are modest, the large size of the pretest sample ($N = 424$), the study sample size ($N = 1,409$), and the stringent method used (K-R No. 3) for obtaining the reliabilities seems to allow for their use. Kerr (1972) obtained modest K-R No. 20 (less stringent test than K-R No. 3 based upon assumptions of the data) reliabilities for other scales to be used as moderators. He indicated that while they were not high, certain predictions could be made employing them directly.

Internal-External

A version of a scale developed by Collins (1974) comprise the twelve items used to measure internal-external life orientation (I-E). Collins, using a Likert-type format, found a high correlation (.82) between a forty-six item instrument and Rotter's (1966) twenty-three forced-choice format. Furthermore, the test-retest reliability of the Likert-type items were .54 with median correlations ranging from .18 to .74.

This study utilizes Rotter's conceptualization and borrows Collins' Likert-type format and twelve work-related items to

operationalize the I-E concept. The pretest scale reliability of the items depicted in Exhibit B for the I-E construct was .58. The study sample supports this internal consistency by finding a scale reliability of .62 for the same twelve items. Therefore, the I-E scale is deemed acceptable for moderator analysis.

Self-Esteem

The measurement of self-esteem was adopted from Kohn (1969). Cammann, et al. (1973) support the internal reliabilities of Kohn's scale (.88) by reporting internal consistency of .77 through a Spearman-Brown Prophecy Formula correction of K-R No. 20. However, the study's findings indicate an internal reliability of .38 for the self-esteem scale. This is below the cutoff and suggests that this lack of internal reliability could very well contribute to the paucity of clear relationships deemed from the self-esteem construct.

Acceptance of a Bureaucratic Orientation

Using three of Hall's (1961) subscales of bureaucracy modified to allow for individual differences or acceptance of a bureaucratic orientation, the pretest scale reliabilities indicated an internal consistency coefficient of .56 for hierarchy of authority, .66 for division of labor and .56 for rules for incumbents. Certain items were dropped from the pretest scale. These are indicated in Exhibit C. The study sample's acceptance of a bureaucratic orientation coefficients are indicated in Table 6.

These coefficients are higher (except for division of labor) than the pretest coefficients and are acceptable to indicate clear

Table 6: Internal Scale Reliabilities of the
Individual Difference Variables

Individual Differences	Hall (1961)	Kohn (1969)	Friis & Knox (1972)	Cammann, et al. (1973)	Collins (1974)	Johnson & Stinson (in press)	Pretest Sample	Study Sample
1. Internal-External Life Orientation	--	--	--	--	.54	--	.58	.62
2. Self-Esteem	--	.88	--	.77	--	--	--	.38
3. Willingness to Accept Bureaucratic Orientation								
a) Hierarchy of Authority	.90	--	--	--	--	--	.56	.63
b) Division of Labor	.80	--	--	--	--	--	.66	.62
c) Rule for Incum- bents	.83	--	--	--	--	--	.56	.61
4. Need for Achievement	--	--	.53	--	--	.89	.60	.66
5. Need for Affiliation	--	--	.43	--	--	--	.50	.53

relationships from the acceptance of a bureaucratic orientation construct. The above reliability coefficients parallel Hall's internal consistency coefficients of .90, .80, and .83 for each of the facets respectively. However, it must be recognized that the study utilized a different orientation of Hall's scales as mentioned earlier.

Need for Achievement and Need for Affiliation

This study utilizes Friis and Knox's (1972) instrument modified slightly because of low inter-item correlation and reliability. Friis and Knox's seven item scale was pretested (.60 for need for achievement and .49 for need for affiliation) and items were dropped. The dropped items are indicated in Exhibit C. The study sample scale reliabilities were .66 for need for achievement and .53 for need for affiliation. These are higher reliabilities than Friis and Knox's non-college young adult sample of .53 for need for achievement and .43 for need for affiliation. However, they are lower than Johnson and Stinson's (in press) .89 reliability for need for achievement. Nevertheless, the study's internal consistency coefficients for need for achievement and need for affiliation meet acceptable standards even though they are modest.

Summary of the Individual Difference Scale Internal Reliabilities

Tables 6 and 7 present the seven individual difference variables used as moderators in this study. From Table 6's list of the six other researchers utilizing these same scales or subsets of items, the internal reliabilities reported for each scale, except for self-

Table 7: Characteristics of the Samples and Method
for Obtaining Scale Reliabilities of the
Individual Difference Scales

Researcher	Sample N	Population Sector	Reliability Method
1. Hall (1961)	82	Population not specified	Reliability Coefficient method not published
2. Kohn (1969)	3,101	Males in and around	Average Inter-judge reliability
3. Friis and Knox (1972)	500	Young adult education classes	Spearman-Brown Prophecy Formula Correction of Kuder-Richardson #20
4. Cammann, et al. (1973)	270	Postal workers in Midwest	Spearman-Brown Prophecy Formula Correction of Kuder-Richardson No. 20
5. Collins (1974)	55	University under-graduates	Test-Retest
6. Johnson & Stinson (in press)	90	Military officers, civil service personnel and project engineers	Spearman-Brown Prophecy Formula Correction of Kuder-Richardson No. 20
7. Pretest Sample	424 (hourly and supervisory)	Majority were industry with some public sector data within Ohio	Kuder-Richardson No. 3 with modification for multiple scales
8. Study Sample	1,409 (hourly, non-exempt, exempt, exempt-supervisory, and executive	one industrial firm in Southeastern Texas and one non-profit hospital in Ohio	Kuder-Richardson No. 3 and Cronbach Coefficient Alpha

esteem, seem quite satisfactory. Table 7 indicates the characteristics of each researcher's sample and method used to determine their reliabilities.

Independence of the Seven Moderator Variables

The factor analysis findings for the pretest and study sample loadings and the number of factors associated with each construct is presented in Exhibit D. Generally the findings from the pretest and the study sample are conflicting. Table 8 depicts the number of factors obtained from the pretest versus the study sample.

As shown, hierarchy of authority, division of labor, need for achievement, and need for affiliation are single factors on both the pretest and study sample factor analysis. The study sample factor analysis seems to indicate that all the seven moderator variables are readily interpretable as independent factors with meaningful loadings on generally all items except I-E. The I-E construct has five items that load .26 or below. In addition, self-esteem, hierarchy of authority and need for affiliation each have one item loading .25 or less. Besides these low loadings on the self-esteem scale, the scale did not obtain a factor with an eigenvalue of (1.0). Consequently, an eigenvalue of (0.0) was utilized to obtain the one factor in Table 8. It must be observed that with an eigenvalue of (0.0) for all of the moderator variables, only self-esteem and division of labor can be deemed unidimensional. However, with the before mentioned criteria of (1.0) as the eigenvalue decision rule, all moderator variables except self-esteem meet the test of unidimensionality.

Table 8: Simplified Version Depicting the
Number of Factors Obtained from
the Moderator Variables

Variables	Number of Factors Obtained	
	Pretest Sample	Study Sample
1. I-E	Four	One
2. Self-Esteem	(see Exhibit B)	One*
3. Hierarchy of Authority	One	One
4. Division of Labor	One	One
5. Rules for Incumbents	Two	One
6. Need for Achievement	One	One
7. Need for Affiliation	One	One

*Modified to accomodate an eigenvalue of (0.0)

In addition to the factor analysis findings, a Kaiser Statistic of sampling adequacy was performed on all scales. The results of this sampling adequacy test are shown in Table 16 at the end of this chapter. These coefficients of sampling adequacy are lower (especially self-esteem) than desired, but are suited for use in moderator analysis. They are not high nor modest; however, certain predictions about interactions could be made by employing these constructs.

In summary, the results from the reliability analysis and the factor analysis seems to indicate the individual difference variables with the exception of self-esteem to possess acceptable internal reliability and construct validity.

Internal Scale Reliabilities of the Outcome Variables

Stogdill's (1965) scales of the three facet satisfactions:

(1) satisfaction with company, management and recognition (deemed overall satisfaction); (2) satisfaction with pay; and (3) job content or job satisfaction were utilized to measure facet satisfaction. Stogdill's scales have exhibited high internal reliability and are factorally independent. Other scales tapping the same constructs had a large number of items and/or possessed questionable reliability and validity. The propensity to leave the organization scale is relatively new and has only been used by Stinson and Johnson (1975). These four outcome scales were not pretested; however, there was sufficient prior research to deem these dependent variables to possess high internal reliability and validity.

The results of the internal consistency analysis support these past findings. The scale reliabilities for the three facet

satisfactions were .92, .81, and .84 respectively. Propensity to leave was .73. These are excellent reliabilities and are more than adequate to indicate clear relationships with the construct. Exhibit I presents the summary scale data and corresponds almost perfectly with Stogdill's (1965) report of the three facet satisfactions. Tables 9 and 10 on the following pages present the four outcome variables used as dependent variables in this study and characterizes each of the above researcher's population sample and method used to obtain the scale reliability.

Independence of the Outcome Variables

The three facet satisfaction scales were found to be factorally independent, the factor solution was readily interpretable, and high loadings were obtained. Specifically, loadings in the range of .60 and .70 were obtained. These loadings and factor solutions are depicted in Exhibit D. The unidimensionality of scale construct findings support Stogdill's (1965) findings. Propensity to leave was found to have one factor with moderate to high loadings. It is noteworthy, however, to observe that with an eigenvalue of (0.0), only the constructs of pay satisfaction and job satisfaction remain unidimensional.

In addition to factor analysis, the Kaiser statistic was performed and these results are indicated in Table 16 at the end of this chapter. These Kaiser statistics indicate the outcome variables are also adequate for research purposes.

Table 9: Internal Scale Reliabilities of the Outcome Variables

Outcome Variables	Source of Ratings				
	Stogdill (1965)	Green & Organ (1974)	Stinson & Johnson (1975)	Organ & Green (1974b)	Study Sample
1. Facet Satisfaction					
a) Overall Satisfaction	.88	not reported	--	--	.92
b) Pay	.73	--	--	--	.81
c) Job Satisfaction	.83	not reported	--	.80	.84
2. Propensity to Leave the Organization	--	--	.90	--	.73

Table 10: Characteristics of the Samples and Method for Obtaining
Scale Reliabilities for the Outcome Variables

Researcher	Sample N	Population Sector	Reliability Method
1. Stogdill (1965)	607 (hourly, clerical, supervisors and executives)	Industrial and public service employees	Kuder-Richardson No. 8
2. Green & Organ (1974)	94	Senior industrial scientists	Not reported
3. Stinson & Johnson (1975)	193 (telephone operators)	Telephone operators	Spearman-Brown Prophecy Formula Correction of Kuder-Richardson No. 20
4. Organ & Green (1974b)	94	Senior industrial scientists	Split-half with Spearman-Brown Prophecy Correction Formula
5. Study Sample	1,409 (hourly, non-exempt, exempt-supervisory, and executive)	one industrial firm in Southeastern Texas and one non-profit hospital in Ohio	Kuder-Richardson No. 3 and Cronbach Coefficient Alpha

Interrelations of the Variables in the Interactional Model

The relationships among the five facets of task structure are presented in Table 11. Although all of the facets are positively related with one another, none of the correlations are of substantial magnitude. This corresponds with Hackman and Lawler's (1971) findings except with the level of relationship among variety and autonomy. In fact, excluding Hackman and Lawler's high correlation of .67 among autonomy and variety, the correlations presented in Table 11 are moderately higher than their research. The level of interrelationships among the five facets of task structure as measured in this study are lower than that of Turner and Lawrence (1965), and does not mitigate against the use of the five dimensions separately as descriptors of task structure are significant at the $p < .01$ level.

The relationships among the seven individual difference variables are presented in Table 12. All of the correlations are positive except for the relationship between rules for incumbents and division of labor. Eighteen of the twenty-one correlations are significant at the $p < .01$ or $p < .05$ level. Due to the original nature of this research, comparisons with other researchers' individual difference measures and relationships cannot be made. However, the seven individual difference relationships seem to moderately correlate with one another except for I-E and need for affiliation, self-esteem and division of labor, and need for achievement and division of labor. The relationship among the six

Table 11: Correlations Among the Facets of Task Structure

1. Autonomy	1.0				
2. Skill Variety	.1955*	1.0			
3. Task Feedback	.2730*	.1306*	1.0		
4. Task Identity	.2166*	.2532*	.1502*	1.0	
5. Upward Influence	.3523*	.0325	.1156*	.1396*	1.0
	1	2	3	4	5

N = 1,283

* = $p < .01$

Table 12: Correlations Among the Individual
Difference Variables

1. Internal-External	1.0						
2. Self-esteem	.1815*	1.0					
3. Hierarchy of Authority	.2908*	.2603*	1.0				
4. Division of Labor	.0696**	.0456	.0869*	1.0			
5. Rules for Incumbents	.2677*	.1586*	.1975*	-.2068*	1.0		
6. Need for Achievement	.1592*	.2239*	.2159*	.0027	.2731*	1.0	
7. Need for Affiliation	.0223	.1113*	.1870*	.0611**	.1014*	.3191*	1.0
	1	2	3	4	5	6	7

N = 1,283

* = $p < .01$

** = $p < .05$

demographic variables in the interactional model are presented in Table 13. All relationships are positive except for the correlations among age and socialization-rearing, sex and education, and company tenure-seniority and socialization-rearing. For verification purposes, the relationships among company tenure-seniority and age of .58 and education and job level of .46 are significantly high and correspond to past research (Vroom, 1964). Eight of the fifteen correlations are significant at the $p < .01$ level.

The relationships among the four dependent variables are presented in Table 14. The three facet satisfactions are highly positively related to one another. This supports Stogdill's (1965) findings. Propensity to leave is highly negatively related to the three facet satisfactions. The research of Rizzo, et al. (1970), Lyons (1971), and Johnson and Stinson (in press) are in agreement with these negative relationships. All of the dependent variables are highly related to one another and all are significant at the $p < .01$ level. In summary, forty-one of the fifty-two relationships among the variables in the interactional model are significantly intercorrelated to a moderate or high degree. Exhibit N indicates the intercorrelations among the twenty-two variables in the interactional model.

Summary of the Measurement of the Sixteen Variables

From the Principal Factor(s) Solution with an eigenvalue of (1.0), it has been determined that all the scales except for self-esteem possess unidimensionality of scale construct. Table 15 and Table 16 on the following pages present a summary of the scale

Table 13: Correlations Among the
Demographic Variables

1. Age	1.0					
2. Sex	.0017	1.0				
3. Socialization	-.0260	.1161*	1.0			
4. Job Level	.2516*	.1689*	.0427	1.0		
5. Education	.0006	-.0303	.0037	.4636*	1.0	
6. Company Tenure	.5843*	.0744*	-.0345	.2444*	.0740*	1.0
	1	2	3	4	5	6

N = 1,283

* = $p < .01$

Table 14: Correlations Among the
Dependent Variables

1. Overall Satisfaction	1.0			
2. Pay Satisfaction	.4904*	1.0		
3. Job Satisfaction	.5217*	.3405*	1.0	
4. Propensity to Leave	- .4427*	- .2102*	- .3131*	1.0
	1	2	3	4

N = 1,283

* = $p < .01$

Table 15 : Comparison of Pretest and Study Sample
Scale Reliability Coefficients

Variables	Pre-Test Sample	Study Sample	
		KR - #3	*Cronbach Alpha
<u>TASK STRUCTURE:</u>			
1. Autonomy	.6770 (N=402)	.6147 (N=1287)	.6552
2. Skill Variety	.6478 (N=410)	.6667 (N=1281)	.7006
3. Task Feedback	(see Exhibit B)	.6261 (N=1305)	.6921
4. Task Identity	(see Exhibit B)	.5597 (N=1305)	.6214
5. Upward Influence	.8691 (N=270)	.8862 (N=1315)	.8945
<u>INDIVIDUAL DIFFERENCES:</u>			
1. Internal-External	.5789 (N=403)	.5980 (N=1318)	.6158
2. Self-Esteem	(see Exhibit B)	.3145 (N=1358)	.3792
3. Acceptance of Bureau- cratic Orientation			
a. Hierarchy of Authority	.5641 (N=415)	.5845 (N=1356)	.6288
b. Division of Labor	.6583 (N=408)	.5564 (N=1360)	.6211
c. Rules for Incumbents	.5593 (N=408)	.5618 (N=1341)	.6114
4. Need for Achievement	.5947 (N=413)	.6099 (N=1346)	.6593
5. Need for Affiliation	.4923 (N=417)	.4659 (N=1346)	.5312
<u>OUTCOMES:</u>			
1. Facet Satisfaction			
a. Overall Satisfaction	(see Exhibit B)	.9195 (N=1296)	.9236
b. Pay Satisfaction	(see Exhibit B)	.7693 (N=1288)	.8063
c. Job Satisfaction	(see Exhibit B)	.7936 (N=1355)	.8367
2. Propensity to Leave	(see Exhibit B)	.6848 (N=1348)	.7290

Note: Cronbach Alpha (N) same as KR - #3 (N)

Table 16: Summary of Kaiser's
Sampling Adequacy

TASK STRUCTURE:

Autonomy	.40098
Skill Variety	.49518
Task Feedback	.69769
Task Identity	.47124
Upward Influence	.79689

INDIVIDUAL DIFFERENCES:

Internal-External	.32563
Self-Esteem	.15089
Hierarchy of Authority	.38367
Division of Labor	.31833
Rules for Incumbents	.30831
Need for Achievement	.39376
Need for Affiliation	.41288

OUTCOMES:

Overall Satisfaction	.80980
Pay Satisfaction	.75274
Job Satisfaction	.70904
Propensity to Leave	.47944

reliabilities and Kaiser Sampling Adequacy tests. Both of these measures add further evidence that these variables seem to possess some instances of independence of scale and the necessary internal reliabilities for scientific research.

Exhibit N indicates the intercorrelations among the five facets of task structure, the seven personality characteristics, the six demographic variables, and the four outcome variables. To summarize, this exhibit indicates that four hundred and two (out of a total of four hundred and eighty-four) of the intercorrelations were significant at the $p < .01$ or $p < .05$ level. For a detailed investigation of significance levels, refer to Exhibit N.

CHAPTER V

THE RESEARCH FINDINGS

This chapter is concerned with the presentation of the findings related to each hypothesis defined in Chapter III. The particular hypothesis being tested is stated first. Then the statistical test utilized to test the hypothesis is explained briefly. After a particular hypothesis has been stated and the statistical test discussed, the findings relevant to that hypothesis are presented and discussed. The same basic reporting procedure is utilized for each hypothesis. As with each hypothesis, the research objective is to reject the null hypothesis and therefore accept the alternate hypothesis.

Null Hypothesis 1: There will be no individual differences that moderate the association between task structure and the facet satisfactions.

Alternative Hypothesis: The association between the different facets of task structure and the facet satisfactions are moderated by:

- 1-a: Internal-external life orientation
- 1-b: Self-esteem
- 1-c: Willingness to accept a bureaucratic orientation
 - 1. Hierarchy of authority
 - 2. Division of labor
 - 3. Rules for incumbents
- 1-d: Need for achievement
- 1-e: Need for affiliation

Statistical Test

Multiple Classification Analysis (MCA) was utilized to test the hypothesis concerning the interaction effects (i.e., conditioning effects, contingency effects, moderator effects, and

specification effects) between each of the five facets of task structure and each of the seven moderators or individual difference variables with each of the three facet satisfactions. The significance of each MCA [i.e., the difference between the MCA's eta squared (η^2) and R^2] was tested by means of a "F" test.

Multiple Classification Analysis (MCA)

There are three basic requirements that any explanatory model should meet. One requirement is a convenient means of representation, such as that given by a linear prediction equation of the form $\underline{Y} = f(\underline{A}, \underline{B}, \underline{C} \dots) + \underline{e}$, where \underline{Y} represents scores on the criterion as a function of predictor variables \underline{A} , \underline{B} , $\underline{C} \dots$ plus error (\underline{e}). A second requirement is that the predictability of each individual's criterion score is maximized using predictors selected with a minimum change of including predictors that would prove ineffective for a replication sample of respondents. A third requirement is the minimization of the change of failing to include as predictors those variables that do work consistently well in explaining criterion variance.

One strategy for constructing empirically derived models meeting these requirements has been suggested by Andrews, Morgan, and Sonquist (1967) and Andrews, et al. (1973). This strategy, usually involving the use of two complementary statistical procedures [(i.e., MCA and Automatic Interaction Detector (AID)] for identifying useful predictors and examining their individual and collective or pattern relationships to a criterion, appeared ideally suited to answer the question regarding interaction of

moderators between task structure and facet satisfactions.

Instead of utilizing AID to determine if there were any possible interaction effects present, this study proceeded empirically. From the theoretical and empirical findings presented in Chapter II, seven individual difference variables were identified and constructed as moderating the relationships among the different facets of task structure and the three facet satisfactions. Consequently, the study proceeded directly to MCA without eliminating any possible noninteraction effects through the use of AID.

The statistical technique used to test this interaction hypothesis was MCA from OSIRIS III as developed by Andrews, et al. (1973) at the Institute for Social Research at The University of Michigan. MCA assumes that a criterion score consists of the sum of a series of main effects. These main effects are coefficients associated with membership in a particular response category of each predictor. The model based on MCA can be presented by the equation $Y = \bar{Y} + a_i + b_j + c_k + \dots + e_{ijk}$, where \bar{Y} is the sample mean on the criterion and a_i is the coefficient computed by MCA indicating the effect (to be added or subtracted from the mean) of being in a particular response category of predictor A. b_j indicates the effect on a particular score of predictor B, etc.

Other than their use of different algorithms and of predictors that differ considerably in their scaling assumptions, MCA and multiple regressions have much in common. Both accommodate correlated predictors and show the effects of each predictor on the criterion while holding constant the effects of other predictors,

thereby enabling the detection and elimination of predictors having spurious zero-order correlations with the criterion. Both generate a R (the multiple correlation between the set of predictors and the criterion) and a R^2 (an estimate of the proportion of criterion variance explained by the main effects of all predictor variables operating simultaneously). For those unfamiliar with this relatively new statistical technique, refer to Exhibit I for more detailed information.

Due to the large study N , the F test was calculated at $F(16, \infty)$ where a F value ≥ 1.72 is necessary to reject the null hypothesis at the .10 level of significance. A F value ≥ 2.01 is required for significance at the .05 level of significance. Finally, a F value ≥ 2.75 is required for significance at the .01 level of significance.

Findings

The findings presented below regarding the interaction or moderation hypothesis are segmented according to each of the three facet satisfactions. Within each MCA analysis mode, a specific facet of task structure and a specific individual difference variable is taken independently to produce a R^2 . The next step is to combine the same facet of task structure and the same individual difference variable into a pattern variable (i.e., really a third predictor whose presence has not be accounted for in the main effects) to produce Ni^2 . The differences between the two R^2 's is the amount of interaction or moderation due to combining the two predictor variables into this third predictor variable.

Overall Satisfaction

With the exception of self-esteem, all of the personality variables at one time or another in the MCA analysis mode moderate the relationship between task structure and overall satisfaction, as noted in Table 17. For the total industrial and public sector sample combined, the following eight relationships showed significance at the .10 or .05 level:

1. Autonomy and need for achievement
2. Skill variety and need for affiliation
3. Task identity and hierarchy of authority
4. Task identity and need for achievement
5. Upward influence and internal-external life orientation
6. Upward influence and division of labor
7. Upward influence and rules for incumbents
8. Upward influence and need for affiliation

The percent of variance in overall satisfaction explained by the pattern variable(s) ranges from a low of five percent with skill variety and need for affiliation to twenty percent with upward influence and rules for incumbents. Of the thirty-five possible interactions between the facets of task structure and the seven personality variables with overall satisfaction, the above eight interactions were significant. As indicated by Table 17, the multiple R ranges from a low of .19 with skill variety and need for affiliation to .42 with upward influence and rules for incumbents. It is noteworthy to look at the rank ordering of the beta coefficients with each facet of task structure and each per-

Table 17: Results of Testing for Interaction
Between the Different Facets of
Task Structure and Individual Dif-
ferences with Overall Satisfaction

DEPENDENT VARIABLE	MCA Analysis Mode	Autonomy					Skill Variety				
		Beta Wt.	R ²	MR	Ni ²	F Value	Beta Wt.	R ²	MR	Ni ²	F Value
O V E H A L L	Facet of Task Structure I-E (Pattern)	.27					.16				
		.07	.08035	.29	.10151	1.69	.09	.03161	.16	.04204	0.92
S A T I S F A C T I O N	Facet of Task Structure Self-Esteem (Pattern)	.28					.16				
		.04	.07807	.27	.08939	1.05	.05	.02651	.15	.03900	1.10
	Facet of Task Structure Hierarchy of Authority (Pattern)	.28					.16				
		.05	.07806	.27	.09137	1.25	.03	.02465	.14	.03635	1.05
	Facet of Task Structure Division of Labor (Pattern)	.28					.15				
		.20	.11667	.34	.13018	1.31	.20	.06255	.24	.07183	0.84
	Facet of Task Structure Rules for Incumbents (Pattern)	.26					.12				
		.28	.14655	.38	.16009	1.20	.28	.09590	.30	.10258	0.56
	Facet of Task Structure Need for Achievement (Pattern)	.26					.14				
		.17	.10437	.32	.11612	1.13	.18	.05465	.23	.06465	0.90
	Facet of Task Structure Need for Affiliation (Pattern)	.27					.15				
		.09	.08359	.30	.10331	1.86***	.10	.02995	.19	.05237	2.01**

*** p ≤ .10

** p ≤ .05

where: R² = Multiple Correlation Coefficient Squared

MR = Multiple R

Ni² = Eta Squared-Correlation Ratio

F Value = F(16, ∞)

(Pattern) = Combination of particular task
structure and particular individual
difference variable

Table 17: Results of Testing for Interaction Between the Different Facets of Task Structure and Individual Differences with Overall Satisfaction (continued)

DEPENDENT VARIABLE	MCA Analysis Mode	Task Feedback					Task Identity				
		Beta Wt.	R ²	MR	Ni ²	F Value	Beta Wt.	R ²	MR	Ni ²	F Value
O	Facet of Task Structure I-E (Pattern)	.30					.20				
		.08	.09353	.30	.10117	0.71	.07	.04438	.20	.05697	1.12
V	Facet of Task Structure Self-Esteem (Pattern)	.30					.20				
		.04	.03717	.30	.09973	1.15	.04	.04039	.19	.05214	1.04
L	Facet of Task Structure Hierarchy of Authority (Pattern)	.30					.20				
		.05	.09112	.29	.10213	1.04	.04	.04057	.21	.06224	1.95***
A	Facet of Task Structure Division of Labor (Pattern)	.29					.19				
		.19	.12333	.34	.12747	0.40	.19	.07491	.26	.08073	0.53
S	Facet of Task Structure Rules for Incumbents (Pattern)	.30					.17				
		.26	.16609	.40	.17623	0.91	.27	.11103	.33	.12476	1.16
C	Facet of Task Structure Need for Achievement (Pattern)	.28					.18				
		.16	.11278	.33	.12678	1.35	.16	.06538	.27	.08754	2.05**
O	Facet of Task Structure Need for Affiliation (Pattern)	.29					.19				
		.09	.09298	.31	.10355	0.99	.11	.04995	.21	.05814	0.73

*** $p \leq .10$

** $p \leq .05$

where: R^2 = Multiple Correlation Coefficient Squared
MR = Multiple R

Ni^2 = Eta Squared-Correlation Ratio

F Value = $F(16, \infty)$

(Pattern) = Combination of particular task structure and particular individual difference variable

Table 17: Results of Testing for Interaction Between the Different Facets of Task Structure and Individual Differences with Overall Satisfaction (continued)

DEPENDENT VARIABLE	MCA Analysis Mode	Upward Influence				
		Beta Wt.	R ²	MR	Ni ²	F Value
O	Facet of Task Structure I-E (Pattern)	.29				
		.06	.08696	.30	.10714	1.90***
V	Facet of Task Structure Self-Esteem (Pattern)	.29				
		.04	.08242	.28	.09137	0.83
E	Facet of Task Structure Hierarchy of Authority (Pattern)	.29				
		.05	.08287	.29	.09084	0.74
N	Facet of Task Structure Division of Labor (Pattern)	.29				
		.22	.12838	.37	.15179	2.33**
A	Facet of Task Structure Rules for Incumbents (Pattern)	.30				
		.31	.17611	.42	.19545	1.78***
L	Facet of Task Structure Need for Achievement (Pattern)	.28				
		.18	.11321	.33	.12484	1.12
L	Facet of Task Structure Need for Affiliation (Pattern)	.28				
		.08	.0768	.30	.10594	1.72***

*** $p \leq .10$

** $p \leq .05$

where: R² = Multiple Correlation Coefficient Squared
 MR = Multiple R
 Ni² = Eta Squared-Correlation Ratio
 F Value = F(16, ∞)
 (Pattern) = Combination of particular task structure and particular individual difference variable

sonality variable taken into consideration independently. In certain circumstances throughout the MCA analysis mode with overall satisfaction, some personality beta coefficients are relatively more important than the facet coefficients of task structure.

Pay Satisfaction

With the exception of hierarchy of authority, need for achievement and need for affiliation, the remaining four individual difference variables at one time or another in the MCA analysis mode moderate the relationship between task structure and pay satisfaction, as noted in Table 18. For the total combined sample, the following five relationships showed significant interaction at the .10, .05 or .01 level:

1. Autonomy and rules for incumbents
2. Skill variety and self-esteem
3. Task feedback and internal-external life orientation
4. Task feedback and division of labor
5. Upward influence and division of labor

The percent of variance in pay satisfaction explained by the pattern variable(s) ranges from a low of three percent with skill variety and self-esteem to eight percent with task feedback and division of labor. Of the thirty-five possible interactions between the facets of task structure and the seven personality variables with pay satisfaction, the above five interactions were significant. As indicated by Table 18, the multiple R ranges from a low of .13 with skill variety and self-esteem to .25 with task feedback and division of labor. Once again, looking at the rank ordering of the

Table 18: Results of Testing for Interaction
Between the Different Facets of
Task Structure and Individual Dif-
ferences with Pay Satisfaction

DEPENDENT VARIABLE	PCA Analysis Mode	Autonomy					Skill Variety				
		Beta Wt.	R ²	MR	Ni ²	F Value	Beta Wt.	R ²	MR	Ni ²	F Value
P A Y S A T I S F A C T I O N	Facet of Task Structure I-E (Pattern)	.03 .07	.01311	.12	.03210	1.64	.09 .04	.01403	.07	.02190	0.68
	Facet of Task Structure Self-Esteem (Pattern)	.09 .05	.00964	.05	.02040	0.91	.10 .05	.01123	.13	.03357	1.94***
	Facet of Task Structure Hierarchy of Authority (Pattern)	.09 .05	.00952	.09	.02500	1.34	.10 .05	.01103	.09	.02498	1.21
	Facet of Task Structure Division of Labor (Pattern)	.08 .19	.04398	.21	.05833	1.32	.09 .19	.04475	.21	.05882	1.25
	Facet of Task Structure Rules for Incumbents (Pattern)	.09 .22	.05016	.23	.07232	1.75***	.06 .22	.05293	.20	.05913	0.48
	Facet of Task Structure Need for Achievement (Pattern)	.08 .05	.01060	.07	.01691	0.54	.09 .06	.01224	.03	.02297	0.92
	Facet of Task Structure Need for Affiliation (Pattern)	.09 .05	.00935	.06	.01767	1.51	.10 .05	.01162	.09	.02483	1.14

*** $p \leq .10$

** $p \leq .05$

* $p \leq .01$

where: R² = Multiple Correlation Coefficient Squared

MR = Multiple R

Ni² = Eta Squared-Correlation Ratio

F Value = F(16, ∞)

(Pattern) = Combination of particular task
structure and particular individual
difference variable

Table 18: Results of Testing for Interaction
Between the Different Facets of
Task Structure and Individual Dif-
ferences With Pay Satisfaction
(continued)

DEPENDENT VARIABLE	MCA Analysis Mode	Task Feedback					Task Identity				
		Beta Wt.	R ²	MR	NI ²	F Value	Beta Wt.	R ²	MR	NI ²	F Value
P A Y S A T I S F A C T I O N	Facet of Task Structure 1-3 (Pattern)	.13 .07	.01661	.17	.04933	2.47*	.06 .01	.01073	.07	.01777	0.60
	Facet of Task Structure Self-Esteem (Pattern)	.14 .05	.02059	.10	.02788	0.62	.07 .05	.00655	.03	.01471	0.59
	Facet of Task Structure Hierarchy of Authority (Pattern)	.14 .05	.02041	.11	.03141	0.95	.07 .04	.00644	.02	.01390	0.63
	Facet of Task Structure Division of Labor (Pattern)	.13 .19	.05478	.25	.07590	2.01**	.06 .19	.03911	.19	.05272	1.20
	Facet of Task Structure Rules for Incumbents (Pattern)	.14 .21	.06610	.23	.07142	0.42	.07 .22	.05362	.20	.06081	0.56
	Facet of Task Structure Need for Achievement (Pattern)	.14 .06	.02253	.14	.03727	1.27	.07 .05	.00759	.06	.02153	1.20
	Facet of Task Structure Need for Affiliation (Pattern)	.14 .04	.01985	.15	.03866	1.63	.07 .04	.00638	.02	.01507	0.74

*** $p \leq .10$

** $p \leq .05$

* $p \leq .01$

where: R² = Multiple Correlation Coefficient Squared

MR = Multiple R

NI² = Eta Squared-Correlation Ratio

F Value = F(16, ∞)

(Pattern) = Combination of particular task
structure and particular individual
difference variable

Table 18: Results of Testing for Interaction Between the Different Facets of Task Structure and Individual Differences with Pay Satisfaction (continued)

DEPENDENT VARIABLE	MOA Analysis Mode	Upward Influence				
		Beta Wt.	R ²	MR	NI ²	F Value
P A I J A P I J F A C I U N	Facet of Task Structure I-M (Pattern)	.08 .07	.01217	.10	.02696	1.27
	Facet of Task Structure Self-Esteem (Pattern)	.08 .05	.00871	.05	.01714	0.72
	Facet of Task Structure Hierarchy of Authority (Pattern)	.08 .04	.00864	.05	.02017	0.99
	Facet of Task Structure Division of Labor (Pattern)	.08 .19	.03839	.21	.05982	1.90***
	Facet of Task Structure Rules for Incumbents (Pattern)	.09 .22	.05693	.22	.06832	0.90
	Facet of Task Structure Need for Achievement (Pattern)	.08 .06	.01018	.09	.02542	1.31
	Facet of Task Structure Need for Affiliation (Pattern)	.08 .03	.00765	.03	.01871	0.94

*** $p \leq .10$

** $p \leq .05$

* $p \leq .01$

where: R^2 = Multiple Correlation Coefficient Squared
 MR = Multiple R
 NI^2 = Eta Squared-Correlation Ratio
 F Value = $F(16, \infty)$
 (Pattern) = Combination of particular task structure and particular individual difference variable

beta coefficients with each facet of task structure and each personality variable taken into consideration independently is noteworthy. As with overall satisfaction, some personality beta coefficients in the MCA analysis mode are relatively more important than the facet coefficients of task structure. Moreover, it is obvious that task feedback is the most important of the five facets of task structure in regards to the interaction of individual difference variables with one's task. Clearly, however, the five facets of task structure with their accompanying personality variable explain more of the variance with overall satisfaction than they explain with pay satisfaction.

Job Satisfaction

With the exception of I-E, self-esteem, need for achievement, and need for affiliation, the remaining three personality variables at one time or another in the MCA analysis mode moderate the relationship between task structure and job satisfaction, as noted in Table 19. For the total sample, the following three relationships showed significant interaction or moderation at the .10 level:

1. Autonomy and division of labor
2. Skill variety and hierarchy of authority
3. Upward influence and division of labor

The percent of variance explained in job satisfaction explained by the pattern variable(s) ranges from four percent with skill variety and hierarchy of authority to ten percent with upward influence and division of labor. Of the thirty-five possible interactions between the facets of task structure and the seven

Table 19: Results of Testing for Interaction Between the Different Facets of Task Structure and Individual Differences with Job Satisfaction

DEPENDENT VARIABLE	MCA Analysis Mode	Autonomy					Skill Variety				
		Beta Wt.	R ²	MR	Ni ²	F Value	Beta Wt.	R ²	MR	Ni ²	F Value
I D I S A T I S F A C T I O N	Facet of Task Structure I-E (Pattern)	.21 .03	.04551	.22	.06348	1.62	.10 .04	.010911	.07	.017	0.55
	Facet of Task Structure Self-Esteem (Pattern)	.22 .07	.05143	.21	.06123	0.78	.10 .06	.00804	.10	.0202	1.7
	Facet of Task Structure Hierarchy of Authority (Pattern)	.22 .07	.05076	.21	.06217	1.63	.11 .05	.01383	.09	.03512	1.68***
	Facet of Task Structure Division of Labor (Pattern)	.21 .17	.06834	.27	.08759	1.73***	.10 .17	.03376	.13	.04771	1.44
	Facet of Task Structure Rules for Incumbents (Pattern)	.20 .22	.09113	.29	.10370	1.04	.06 .22	.05492	.22	.06725	0.98
	Facet of Task Structure Need for Achievement (Pattern)	.20 .19	.07716	.28	.09393	1.56	.07 .20	.04482	.21	.05820	1.21
	Facet of Task Structure Need for Affiliation (Pattern)	.21 .06	.04791	.21	.06167	1.2+	.10 .07	.01551	.10	.02400	0.74

*** $p \leq .10$

** $p \leq .05$

* $p \leq .01$

where: R² = Multiple Correlation Coefficient Squared

MR = Multiple R

Ni² = Eta Squared-Correlation Ratio

F Value = F(16, ∞)

(Pattern) = Combination of particular task structure and particular individual difference variable

Table 19: Results of Testing for Interaction
Between the Different Facets of
Task Structure and Individual Dif-
ferences with Job Satisfaction
(continued)

DEPENDENT VARIABLE	MCA Analysis Note	Task Feedback					Task Identity				
		Beta Wt.	R ²	MR	Ni ²	F Value	Beta Wt.	R ²	MR	Ni ²	F Value
J O B S A T I S F A C T I O N	Facet of Task Structure I-E (Pattern)	.20 .03	.04128	.20	.05727	1.02	.18 .04	.03478	.18	.04835	1.20
	Facet of Task Structure Self-esteem (Pattern)	.21 .05	.04564	.20	.05561	0.88	.18 .07	.03755	.19	.05115	1.20
	Facet of Task Structure Hierarchy of Authority (Pattern)	.21 .06	.04795	.21	.06060	1.13	.19 .07	.03916	.19	.05244	1.15
	Facet of Task Structure Division of Labor (Pattern)	.20 .17	.07058	.26	.08337	1.23	.18 .16	.06077	.24	.07400	1.20
	Facet of Task Structure Rules for Incumbents (Pattern)	.18 .21	.03228	.28	.09443	0.99	.16 .21	.07595	.23	.09515	1.56
	Facet of Task Structure Need for Achievement (Pattern)	.18 .18	.07331	.26	.09126	0.76	.16 .19	.06938	.25	.07942	0.82
	Facet of Task Structure Need for Affiliation (Pattern)	.20 .07	.04564	.20	.05861	1.16	.18 .07	.03813	.18	.04777	0.95

*** $p \leq .10$

** $p \leq .05$

* $p \leq .01$

where: R² = Multiple Correlation Coefficient Squared

MR = Multiple R

Ni² = Eta Squared-Correlation Ratio

F Value = F(15, ∞)

(Pattern) = Combination of particular task
structure and particular individual
difference variable

Table 19: Results of Testing for Interaction Between the Different Facets of Task Structure and Individual Differences with Job Satisfaction (continued)

DEPENDENT VARIABLE	RMA Analysis Mode	Upward Influence				
		Beta Wt.	R ²	NR	Ni ²	Value
	Facet of Task Structure I-S (Pattern)	.21				
		.04	.04382	.20	.05830	1.29
J	Facet of Task Structure Self-Esteem (Pattern)	.21				
		.06	.04727	.22	.06461	1.56
O	Facet of Task Structure Hierarchy of Authority (Pattern)	.21				
		.06	.04547	.19	.05186	0.57
S	Facet of Task Structure Division of Labor (Pattern)	.22				
		.19	.07639	.29	.09756	1.97***
A	Facet of Task Structure Rules for Incumbents (Pattern)	.22				
		.24	.10047	.30	.10966	0.76
T	Facet of Task Structure Need for Achievement (Pattern)	.20				
		.21	.08531	.28	.09334	0.75
I	Facet of Task Structure Need for Affiliation (Pattern)	.20				
		.05	.04515	.21	.05966	1.30

*** $p \leq .10$

** $p \leq .05$

* $p \leq .01$

where: R² = Multiple Correlation Coefficient Squared
NR = Multiple R

Ni² = Eta Squared-Correlation Ratio

F Value = F(16, ∞)

(Pattern) = Combination of particular task structure and particular individual difference variable

individual difference variables with job satisfaction, the above three interactions were significant. As indicated in Table 19, the multiple R ranges from a low of .09 with skill variety and hierarchy of authority to .29 with upward influence and division of labor. As with overall satisfaction and pay satisfaction, it is valuable to look at the rank ordering of the beta coefficients with each facet of task structure and each personality variable taken into consideration independently. As with both overall and pay satisfaction, some personality beta coefficients are relatively more important than the facet coefficients of task structure. It is not clear which facet of task structure is the most important of the five facets of task structure in regards to the interaction of personality variables with one's task and job satisfaction.

Summary of Hypothesis 1 Findings

All of the individual difference variables at one time or another in the MCA analysis mode interact or moderate the relationship between the facets of task structure and the three facet satisfactions, as noted in Table 20. Therefore, the null hypothesis is rejected and the alternate hypothesis that individual differences moderate the association between task structure and the three facet satisfactions is confirmed. As indicated in Table 20, sixteen of the relationships are significant. All of the facets of task structure and all of the personality variable combinations are significant at least once during the MCA analysis mode with the dependent variables. However, the percent of variance explained in the dependent variables ranges from three percent to twenty percent.

Table 20: Summary of Statistical Significance of Tests of Hypothesis 1: Sources of Individual Differences as Moderators in the Relationship Between Task Structure and the Facet Satisfaction

Independent Variables (Pattern Variable)	Dependent Variables		
	Overall Satisfaction	Pay Satisfaction	Job Satisfaction
1. Autonomy and Need for Achievement	p < .10		
2. Autonomy and Rules for Incumbents		p < .10	
3. Autonomy and Division of Labor			p < .10
4. Skill Variety and Need for Affiliation	p < .10		
5. Skill Variety and Self-esteem		p < .10	
6. Skill Variety and Hierarchy of Authority			p < .10
7. Task Feedback and I-E		p < .01	
8. Task Feedback and Division of Labor		p < .05	
9. Task Identity and Hierarchy of Authority	p < .10		
10. Task Identity and Need for Achievement	p < .05		
11. Upward Influence and I-E	p < .10		
12. Upward Influence and Division of Labor	p < .05		

Table 20: Summary of Statistical Significance
of Tests of Hypothesis 1: Sources
of Individual Differences as Moder-
ators in the Relationship Between
Task Structure and the Facet Satis-
factions (continued)

Independent Variables (Pattern Variable)	Dependent Variables		
	Overall Satisfaction	Pay Satisfaction	Job Satisfaction
13. Upward Influence and Rules for Incumbents	p < .10		
14. Upward Influence and Need for Affiliation	p < .10		
15. Upward Influence and Division of Labor		p < .10	
16. Upward Influence and Division of Labor			p < .10

It seems clear that the relationship of the five facets of task structure with their accompanying personality variable explain more of the variance in overall satisfaction than they explain with either pay or job satisfaction.

Null Hypothesis 2: Holding individual differences constant, there will be no association between task structure and the facet satisfactions.

Alternate Hypothesis: The positive association between task structure and the facet satisfactions, holding individual differences constant, will depend upon one or more of the following:

- a. Autonomy
- b. Skill variety
- c. Task feedback
- d. Task identity
- e. Upward influence

Statistical Test

Partial-order r or partial correlation coefficients were utilized to test hypotheses 2, 3, and 4 concerning their relationships between each of the facets of task structure, the demographic variables and the outcome variables. The significance of each partial-order r was tested by means of a "t" test. For more detailed information pertaining to this statistical technique, refer to Exhibit M.

For the values of the first-order partial r for the total sample, application of the "t" test revealed that a partial r value ≥ 1.28 ($t = 1,280$) is necessary to reject the null hypothesis at the .10 level of significance. A partial r value ≥ 1.64 ($t = 1,280$) is required for significance at the .05 level. A partial r value ≥ 2.33 ($t = 1,280$) is required for significance at the .01 level.

Findings

The findings presented below regarding the relationship of the five facets of task structure with the three facet satisfactions holding constant individual differences are segmented according to each of the facet satisfactions.

Overall Satisfaction

All of the five facets of task structure were demonstrated to have a positive relationship and be significant with overall satisfaction, as noted in Table 21. The variance in overall satisfaction explained by the partial coefficients ranges from a low of fifteen percent with skill variety to a high of thirty percent with upward influence or participation. To discount possible so-called spurious correlations so often encountered because of methodological problems involved in the use of partial correlations, Table 17, referred to earlier in relation to hypothesis 1, indicates the MCA beta coefficients are almost identical throughout the five facets of task structure with overall satisfaction.

Pay Satisfaction

With the exception of upward influence, four of the facets of task structure were shown to have a positive relationship and be significant with pay satisfaction, as noted in Table 22. However, the individual variance explained in pay satisfaction by autonomy, skill variety and task identity is very low. They are probably significant at the .01 level due largely to the large sample N. In contrast to these low explained variances, the variance in pay satisfaction explained by task feedback is fourteen percent. This

Table 21: The Relationship Between the Facets of Task Structure and Overall Satisfaction with the Individual Differences Held Constant

Facets of Task Structure	Partial Correlation Between Task Structure and Overall Satisfaction with Individual Differences Held Constant
Autonomy	.278*
Skill Variety	.145*
Task Feedback	.289*
Task Identity	.217*
Upward Influence	.303*

N = 1,283

* = $p < .01$

Table 22: The Relationship Between the Facets of Task Structure and Pay Satisfaction with the Individual Differences Held Constant

Facets of Task Structure	Partial Correlation Between Task Structure and Pay Satisfaction with Individual Differences Held Constant
Autonomy	.095*
Skill Variety	.076*
Task Feedback	.135*
Task Identity	.066*
Upward Influence	.023

N = 1,283

* = $p < .01$

significant relationship with pay satisfaction is demonstrated by Table 18, referred to earlier in relation to hypothesis 1, in which the MCA beta coefficients for task feedback are almost identical to the partial coefficient.

It is of interest to suspect the validity of the non-significant relationship of upward influence's association with pay satisfaction on the basis of the beta coefficients indicated in Table 18. The MCA analysis mode in this table indicates that upward influence explains approximately eight percent of the variance in pay satisfaction.

Job Satisfaction

All of the five facets of task structure were demonstrated to have a positive relationship and be significant with job satisfaction as noted in Table 23. The variance in job satisfaction explained by the partial coefficients ranges from a low of ten percent with skill variety to a high of twenty-one percent with autonomy, task feedback, and upward influence. As a validation of these significant relationships, Table 19, referred to earlier in relation to hypothesis 1, indicates the MCA beta coefficients are very similar throughout the five facets of task structure with job satisfaction.

Summary of Hypothesis 2 Findings

With the exception of upward influence with pay satisfaction, the other fourteen relationships between the facets of task structure and the three facet satisfactions are significant at the .01 level and in the hypothesized direction, as noted in Table 24.

Table 23: The Relationship Between the Facets of Task Structure and Job Satisfaction with the Individual Differences Held Constant

Facets of Task Structure	Partial Correlation Between Task Structure and Job Satisfaction with Individual Differences Held Constant
Autonomy	.207*
Skill Variety	.102*
Task Feedback	.208*
Task Identity	.201*
Upward Influence	.205*

N = 1,283

* = $p < .01$

Table 24: Summary of Statistical Significance
of Tests of Hypothesis 2: Relation-
ship of the Different Facets of Task
Structure with the Facet Satisfaction
Holding Individual Differences Constant

Facets of Task Structure	Dependent Variables		
	Overall Satisfaction	Pay Satisfaction	Job Satisfaction
Autonomy	p < .01 (.29)	p < .01 (.10)	p < .01 (.21)
Skill Variety	p < .01 (.15)	p < .01 (.08)	p < .01 (.10)
Task Feedback	p < .01 (.29)	p < .01 (.14)	p < .01 (.21)
Task Identity	p < .01 (.22)	p < .01 (.07)	p < .01 (.20)
Upward Influence	p < .01 (.30)	n.s. (.02)	p < .01 (.21)

N = 1,283

Figures in parentheses represent the partial correlation.

n.s. = nonsignificant relationship

Therefore, null hypothesis 2 is rejected and the alternate hypothesis is accepted. Rank ordering the amount of variance explained by the facets of task structure according to the facet satisfactions indicates task structure explains more variance in overall satisfaction than job or pay satisfaction. In addition, task structure seems to be more important in the explanation of job satisfaction variance than pay satisfaction variance.

Null Hypothesis 3: Holding individual differences constant, there will be no association between task structure and propensity to leave the organization.

Alternate Hypothesis: The negative relationship between task structure and propensity to leave, holding individual differences constant, will depend upon one or more of the following:

- a. Autonomy
- b. Skill variety
- c. Task feedback
- d. Task identity
- e. Upward Influence

Findings

All of the five facets of task structure were shown to have a negative relationship and be significant with propensity to leave the organization, as noted in Table 25. The variance in propensity to leave explained by the partial coefficients ranges from a low of four percent with skill variety to a high of seventeen percent with task identity and upward influence.

Therefore, null hypothesis 3 is rejected and the alternate hypothesis is accepted indicating that the five facets of task structure have a negative influence with propensity to leave the organization.

Table 25: The Relationship Between the Facets of Task Structure and Propensity to Leave with the Individual Differences Held Constant

Facets of Task Structure	Partial Correlation Between Task Structure and Propensity to Leave with the Individual Differences Held Constant
Autonomy	-.142*
Skill Variety	-.038**
Task Feedback	-.147*
Task Identity	-.174*
Upward Influence	-.173*

N = 1,283

** = $p < .10$

* = $p < .01$

Null Hypothesis 4: Holding individual differences and task structure constant, there will be association between the demographic variables and the outcome variables.

Alternate Hypothesis: The positive association between the demographic variables and the outcome variables, holding individual differences and task structure constant, will depend upon one or more of the following:

- a. Age
- b. Sex
- c. Socialization
- d. Wage class - job level
- e. Education
- f. Company tenure - seniority

Findings

The findings presented below regarding the relationship of the six demographic variables with the outcome variables, holding the pattern variable--task structure and individual differences--constant, are segmented according to each of the four dependent variables. The combination variable composed of the facets of task structure and the individual differences make the partial correlations a first-order correlation. These findings are probably spurious in nature because of the existence of many confounding variables that were not measured or uncontrollable in the study.

Overall Satisfaction

Three of the six demographic variables were demonstrated to have a significant relationship with overall satisfaction, as noted in Table 26. However, age and job level or wage class were negative correlations. The variance in overall satisfaction explained by the partial coefficients ranges from a low of nineteen percent with sex to a high of twenty-six percent with job level.

Table 26: The Relationship Between the Demographic Variables and Overall Satisfaction with the Pattern Variable - Individual Differences and Task Structure - Held Constant

Demographic Variables	Partial Correlation Between the Demographic Variables and Overall Satisfaction with Individual Differences and Task Structure Held Constant
Age	-.240*
Sex	.192*
Socialization	.015
Job Level	-.260*
Education	-.029
Company Tenure	-.006

N = 1,283

* = $p < .01$

These partial r 's regarding age and job level must be interpreted with caution. They are indicating that the older people are, the less overall satisfaction these people have with company, recognition, etc. In addition, the partial coefficient associated with job level indicates that the higher the wage classification (i.e., (1) hourly; (2) non-exempt; (3) exempt-nonsupervisory; and (4) exempt - supervisory), the less overall satisfaction these people have. This is contrary to past research studies investigating the relationship between age and job level and overall satisfaction (Vroom, 1964; Herman, et al., 1972; Herman, et al., 1975). As mentioned previously, a possible explanation of this phenomena is methodological problems involving partial correlation resulting in spurious correlations. However, the zero-order correlation between age and overall satisfaction is $-.20$. Likewise, the zero-order correlation between job level and overall satisfaction is $-.24$. For a more detailed understanding of these intercorrelations, refer to Exhibit N.

Another possible reason to suspect the relationship between age and job level with overall satisfaction might be due to the bi-modal age distribution shown in Exhibit K.

Pay Satisfaction

With the exception of age and socialization, the other four demographic variables were shown to have a significant and positive relationship with pay satisfaction, as noted in Table 27. The variance in pay satisfaction explained by the partial coefficients ranges from a low of five percent with job level to a high of

Table 27: The Relationship Between the Demographic Variables and Pay Satisfaction with the Pattern Variable - Individual Differences and Task Structure - Held Constant

Demographic Variables	Partial Correlation Between the Demographic Variables and Pay Satisfaction with the Individual Differences and Task Structure Held Constant
Age	-.004
Sex	.175*
Socialization	.004
Job Level	.048**
Education	.121*
Company Tenure	.172*

N = 1,283

** = $p < .05$

* = $p < .01$

eighteen percent with sex. The correlations regarding job level, education and company tenure or seniority are consistent with other research. In addition, it is interesting to note that the demographic variables account for more of the explained variance in pay satisfaction than the facets of task structure (i.e., with the exception of task feedback) as demonstrated with hypothesis 2, Table 22.

Job Satisfaction

With the exception of socialization and company tenure, the other four demographic variables were demonstrated to have significant relationships with job satisfaction, as noted in Table 28. Like the situation involving overall satisfaction, however, age and job level had significant negative correlations. The variance in job satisfaction explained by the partial coefficients ranges from a low of six percent with education to a high of fifteen percent with age.

The zero-order correlation between age and job satisfaction is $-.14$. Likewise, the zero-order correlation between job level and job satisfaction is $-.10$. As with overall satisfaction, interpretation of these coefficients must be made with caution due to the possible spurious nature of these relationships.

Propensity to Leave

All of the demographic variables were shown to have a significant relationship with propensity to leave the organization, as noted in Table 29. The variance in propensity to leave explained by the partial coefficients ranges from a low of four percent with

Table 28: The Relationship Between the Demographic Variables and Job Satisfaction with the Pattern Variable - Individual Differences and Task Structure - Held Constant

Demographic Variables	Partial Correlation Between the Demographic Variables and Job Satisfaction with the Individual Differences and Task Structure Held Constant
Age	-.154*
Sex	.176*
Socialization	.029
Job Level	-.101*
Education	.058**
Company Tenure	-.036

N = 1,283

** = $p < .05$

* = $p < .01$

Table 29: The Relationship Between the Demographic Variables and Propensity to Leave with the Pattern Variable - Individual Differences and Task Structure - Held Constant

Demographic Variables	Partial Correlation Between the Demographic Variables and Propensity to Leave with Individual Differences and Task Structure Held Constant
Age	.159*
Sex	-.201*
Socialization	-.084*
Job Level	.105*
Education	.038***
Company Tenure	.070*

N = 1,283

*** = $p < .10$

* = $p < .01$

education to twenty percent with sex. However, sex and socialization's coefficients were in the negative direction.

It is interesting to note that age, sex, and job level's significant relationship with propensity to leave is sometimes greater than that of the variance explained by the facets of task structure as shown in hypothesis 3, Table 25.

Summary of Hypothesis 4 Findings

With the exception of socialization and company tenure, the remaining four demographic variables were shown to have significant relationships with three or more of the outcome variables as noted in Table 30. Company tenure is significant with pay satisfaction and propensity to leave while socialization is significant with only propensity to leave. The null hypothesis is therefore rejected and acceptance of the alternate hypothesis is confirmed. However, the directionality of the alternate hypothesis cannot be accepted across all four outcome variables.

It should be noted that the intent of the six demographic variables in the interactional model as shown in Diagram I was to emphasize that variables other than psychological correlates effect respondents relationships with their work environment. Table 30 demonstrates that the demographic variables must be added to the list of variants that affect people's satisfactions and propensity to leave the organization.

One word of caution needs to be added. Due to the probable spurious nature of the intercorrelations mentioned earlier with the use of partial correlation, these results must be interpreted with

Table 30: Summary of Statistical Significance of Tests
of Hypothesis 4: Relationship of the Demo-
graphic Variables with the Outcome Variables
Holding Constant the Pattern Variable -
Individual Differences and Task Structure

Demographic Variables	Dependent Variables			
	Overall Satisfaction	Pay Satisfaction	Job Satisfaction	Propensity to Leave
Age	p < .01 (-.24)	n.s. (-.01)	p < .01 (-.15)	p < .01 (.16)
Sex	p < .01 (.19)	p < .01 (.18)	p < .01 (.18)	p < .01 (-.20)
Socialization	n.s. (.02)	n.s. (.01)	n.s. (.03)	p < .01 (.08)
Job Level	p < .01 (-.26)	p < .05 (.05)	p < .01 (-.10)	p < .01 (.11)
Education	n.s. (-.03)	p < .01 (.12)	p < .05 (.06)	p < .10 (.04)
Company Tenure	n.s. (-.01)	p < .01 (.17)	n.s. (-.04)	p < .01 (.07)

N = 1,283

Figures in parentheses represent the partial correlation

n.s. = nonsignificant relationship

care. However, fourteen of the twenty-four total possible relationships with the four outcome variables were found to be significant at less than the .01 level. Exhibit N, the intercorrelations among the twenty-two variables in the interactional model, should be referred to in determining relationships.

The next chapter, the summary and conclusions section of this multivariate study, presents a summarized review of the findings, reassesses the interaction model, draws limited implications and generalizations from the findings, presents future research needs, and recommends certain suggestions for organizational practice.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Chapters I through III respectively presented the problem area involving the controversy between the advocates of job enrichment and individual differences in relation to job redesign, job enlargement, etc., provided an extensive and complex literature review of the interrelationships among the sixteen variables in the model, and stated four relevant research hypotheses derived from the theory and empirical evidence concerning individual differences and task structures relationship with the four outcome variables. Chapters IV and V respectively indicated the reliability and validity of the measures utilized in the multivariate-interactional model and presented the specific research findings related to each hypothesis. This chapter will present a summarized review of the findings, review and reassess the interactional model provided in Diagram I, provide some implications and generalizations of the findings from this cross-sectional study involving an industrial and public sector organization, indicate future research directions, and list some recommendations and suggestions for organizational practice.

A Summarized Review of the Findings

The multivariate-interactional model predicts that individual differences interact or moderate the relationship between the facets of task structure and the three facet satisfactions. That

is, where certain individual differences and task structure facets are measured independently and where certain combinations of individual differences and task structure facets are combined with one another to form a pattern variable, then this third variable will moderate the relationship between task structure and facet satisfaction. Essentially, this is the nature of the findings involving individual differences. The finding from hypothesis 1 indicated that selective individual difference variables interacted or moderated the relationship between all five facets of task structure and overall satisfaction, pay satisfaction and job satisfaction. Specifically, sixteen selective interactions out of one hundred and five were found to be significant. Rank ordering the frequency of the individual differences as moderators between task structure and facet satisfaction, the following high to low pattern takes shape:

Table 31: Rank Ordering the Frequency of Individual Differences as Moderators Between Task Structure and Facet Satisfaction

Individual Difference Variable	Frequency of Significant Relationships
Division of Labor	Five
Need for Affiliation	Two
Need for Achievement	Two
Rules for Incumbents	Two
Internal-External	Two
Hierarchy of Authority	Two
Self-Esteem	One

From Table 31, the degree to which an individual willingly accepts task specialization and departmentalization (division of labor) is the most important of all of the seven individual difference variables. This supports other research (Munsterberger, 1913; Bills, 1923; Adorno, et al., 1950; Smith, 1955; and Vroom, 1960, 1964) findings which found that selected individuals prefer tasks that are specialized and departmentalized. It is of critical importance not to mistake Table 31 as indicating the significance level of individual difference variables. For example, Table 31 indicates that division of labor in combination with one of the five facets of task structure forming a pattern variable was significant as a combination variable five times. It is important to look at Tables 17, 18, and 19 at the same time. Generally, the results from these three tables indicate:

1. Division of labor, as a moderator or individual difference variable, has a low beta weight of .17 and a high beta weight of .22 across all of the facets of satisfactions and all facets of task structure.
2. Upward influence, as an independent variable or a facet of task structure, has a low beta weight of .08 and a high beta weight of .30 across all of the facet satisfactions and all individual difference variables.

The relative influence (not significance) of the varying and selective impact of the beta weights of the independent and the moderator variables on the outcome variables are indicated in Exhibit O. In interpreting Exhibit O, it is helpful to read across

from one facet of task structure with one individual difference variable. In addition, it is useful to view the five facets of task structure and the one individual difference variable at the same time to ascertain the pattern and nature of the relationships.

It is also important to view the relationship of selected individual differences with selective task structure facets. This complexity of interrelationships can be seen by Table 32.

Table 32 indicates that upward influence is the most important of the facets of task structure and is significant a total of six different times with the moderators of division of labor (three times), need for affiliation (once), rules for incumbents (once), and internal-external (once). Upward influence and a moderator was significant with overall satisfaction four times. This pattern relationship was significant with pay and job satisfaction once each. Next in order of importance of a facet of task structure with an individual difference was autonomy and skill variety with three each. Task feedback and task identity each had two instances in which they emerged in the relationship between individual differences and facet satisfactions.

In relation to the frequency of variance explained by the combination of a facet of task structure and an individual difference, overall satisfaction is the leader with eight relationships shown to be significant. Pay satisfaction and job satisfaction had five and three respectively. From these data, it seems that individual differences and task structure are more important in

Table 32: Selective Nature of the Relationships
Between Task Structure and the Facet
Satisfactions with Individual
Differences

Moderator Variable - Task Structure Relationship	Facet Satisfactions
<u>DIVISION OF LABOR</u>	
Autonomy	Job Satisfaction
Task Feedback	Pay Satisfaction
Upward Influence	Overall Satisfaction
Upward Influence	Pay Satisfaction
Upward Influence	Job Satisfaction
<u>NEED FOR ACHIEVEMENT</u>	
Autonomy	Overall Satisfaction
Task Identity	Overall Satisfaction
<u>NEED FOR AFFILIATION</u>	
Skill Variety	Overall Satisfaction
Upward Influence	Overall Satisfaction
<u>RULES FOR INCUMBENTS</u>	
Autonomy	Pay Satisfaction
Upward Influence	Overall Satisfaction
<u>I-E</u>	
Task Feedback	Pay Satisfaction
Upward Influence	Overall Satisfaction
<u>HIERARCHY OF AUTHORITY</u>	
Skill Variety	Job Satisfaction
Task Identity	Overall Satisfaction
<u>SELF-ESTEEM</u>	
Skill Variety	Pay Satisfaction

the explanation of overall satisfaction than pay satisfaction or job satisfaction.

In summary of the personality findings, it has been shown that individual characteristics moderate the relationship between task structure and facet satisfaction. Therefore, it seems that the general treatment assumptions made by the advocates of job enrichment and job redesign do not always hold. These assumptions must be modified to allow for the interaction of individual differences within experimental situations involving the redesign of one's task. Possibly more important, these interactions are selective in nature and do not hold across the facet satisfactions.

The next major set of relationships examined in the model, holding individual differences constant, predicted that the facets of task structure would be positively associated with the three facet satisfactions and negatively related to propensity to leave. The findings from hypothesis 2 indicate this is indeed the case.

The association explained by upward influence with overall satisfaction was the highest with autonomy and task feedback second in importance. The association with job satisfaction was the next most important with pay satisfaction the least amount of influence explained by the facets of task structure. All relationships were in the positive direction and fourteen of the fifteen predicted relationships were confirmed. The findings from hypothesis 3 indicate that the five facets of task structure were negatively and significantly related to propensity to leave. Upward influence and task identity were identified as the two most important coeffi-

cients for individuals leaving an organization with skill variety explaining the least amount of association. The validity and significance of these coefficients are substantiated by the beta weights from hypothesis 1 in Tables 17, 18 and 19.

The final set of relationships dealt with by the model concern demographic variables. The model predicts that the six personal characteristics of individuals would be related to the four outcome variables. The finding derived from hypothesis 4 showed that job level and sex was related to the three facet satisfactions and propensity to leave. Age was found to be significantly associated with all outcome variables except for pay satisfaction, while education was related with pay and job satisfaction and propensity to leave. Company seniority was found to be related to pay satisfaction and propensity to leave while socialization was only related to propensity to leave.

To summarize the findings resulting from the multivariate-interactional model, it is confirmed that individual differences and demographic variables are important correlates along with the facets of task structure in explaining the psychological responses of the worker at work.

A Reassessment of the Interactional Model

In this section the concern will be with a broad overview of the conceptual model in relation to an extended interactional model to performance over time. Taken as a whole, the findings generally confirm the interactional nature implied by the model. What is needed, however, is to extend the model beyond the four

outcome variables into hard measures over time of absenteeism, turnover, output, quality of output, etc. This extended version of the interactional model would make it more multivariate and more complex. However, as this research has demonstrated, the relationship between task structure, individual differences, demographic variables, and outcomes is already complex. Exhibit O further verifies this complexity of relationships.

Another part of the model which needs future revision is the concern about direction of causality. The present model predicts certain patterns of the relationship among the variables, but it does not predict the direction of the cause-effect relationships. For this feature, the present model is only indirectly relevant because the findings are of an associative nature. Nevertheless, an extended interactional model must be investigated and developed along the lines of a complex and interactional-multivariate design. With such a model included in the design of job enrichment or job redesign experiments, possible cause-effect relationships might emerge.

Implications of the Findings

The results of this study suggest that there are important interactions and interdependencies among the personality and demographic characteristics of individuals and the characteristics of jobs which must be taken account of in the development and design of any full understanding of the impact of job enrichment or job redesign experimentation. The advocates of both scientific management and job enrichment or job design seem to have given insufficient

importance to the interaction or moderation of individual differences and personal characteristics in relation to task structure in determining reactions to jobs and work outcomes. The proponents of the scientific management school have tended to assume that individuals will be content with payment for services rendered regardless of personal or personality characteristics. Contrary to this approach, the job enrichment advocates assume all individuals want and desire self-actualization and will work hard and effectively when they have a challenging task to perform. This present research, involving over fourteen hundred respondents from two different types of organizations, suggests that depending upon the characteristics of the individuals involved, the scientific management and job enrichment approaches noted above are dependent upon the individual differences of workers and their jobs. This is contrary to the general research findings from 1922 to approximately 1970, but supports the findings from approximately 1971 through 1975 as shown in Table 1. The studies from 1922 through 1970 appear generally to support the job enrichment thesis and these are the same studies which "a number of deviations from normally accepted research practice" exist (Hulin and Blood, 1968, p. 218). It becomes apparent from these methodological weaknesses that a number of factors can interact to determine the consequences of job enrichment studies. The latter studies in Table 1, 1971-1975, have generally been unsupportive of the general treatment assumption advocated by the job enrichment proponents.

Studies that are multivariate in design seem to report results suggesting two important implications for researchers and organizational theorists:

1. Scientific management and job enrichment-redesign changes or experiments are appropriate some of the time and inappropriate at other times because of the moderating effects of individual differences.
2. Behavioral scientists and organizations must be careful not to overlook the characteristics of the very people whose tasks they are forever trying to change.

The present findings and conclusions fit well with the previous research of Turner and Lawrence (1965), Hulin and Blood (1968), Hackman and Lawler (1971), Argyris (1973), Robey (1974), Steers and Porter (1974), Stone and Porter (1975), and Stinson and Johnson (1975). In all of the above studies, individual differences (i.e., need strength, sociological variables such as urban-rural backgrounds, demographic variables, and personality measures) were shown to moderate the relationship between the facets of task structure and employee satisfaction. The present study indicates that individual differences interact or moderate the relationships of task structure with overall satisfaction, pay satisfaction, and job satisfaction. In addition, all five facets of task structure were significantly related to the three facet satisfactions and propensity to leave except for the relationship among upward influence and pay satisfaction.

This study's results are similar to Stinson and Johnson (1975) in which they found that the relationship between task simplicity and satisfaction to be moderated by need for achievement and need for affiliation. In their study of four hundred and fifty-four workers from both industrial and public samples, externality (i.e., scoring the Rotter I-E scale as revised by Collins (1974) toward externality as this study did also) did not moderate the task-satisfaction relationship. However, Stinson and Johnson (1975) utilized Saunders (1956) moderator regression analysis technique which assumes the relationship between the task variable and the personality variable ($R_i - R_m$) is multiplicative. In contrast, the MCA utilized in the interactional model assumes an additive relationship and utilizes a one-way analysis of variance design to investigate the interaction among task structure and individual differences. However, the Stinson and Johnson study does support this present research in terms of the selective nature of the moderating effects of individual differences on task structure. In this present study, certain individual differences and certain facets of task structure interact selectively. Therefore, the moderating effect from one facet of task structure to one individual difference with a facet of satisfaction is selective in nature. Moreover, the moderating effects varies from one individual difference to another as the relationship from one satisfaction moves to another satisfaction.

Another implication drawn from this study is the importance of a multivariate design. It seems that the days of simple bivariate designs are about gone due to the complex nature of

individuals' psychological responses to work, organizations, and their environment. More positively, simple designs are no longer needed. The evidence is increasing that individual differences moderate the way people respond to various aspects of organizations and to work practices of organizations. As this study has emphasized, people do not respond according to a set pattern. The implications for job design, reward systems, training, leadership styles and the like are tremendous since they would not have the same effects for all people who work in organizations. To make things even more complicated, it tends to be not only the skills and abilities of the individual that make the difference, but their psychological makeup that counts.

This view opposes the theory of scientific management and job enrichment. Then, too, it also runs contrary to the traditional bureaucratic organization. Supposedly, a large organization cannot be managed if everyone responds differently. But scientific research and organizational practice has indicated that this is not true. Many people react differently to the same organizational practice. As Porter, Lawler, and Hackman (1975) indicated a new way of looking at individual differences may cause the potential for "innovative and exciting types of 'individualized' organizations which accept that people react differently to the same practice and events and that people must be treated differently if both organizational goals and individual needs are to be met." (p. 520)

Future Research Needs

This research is intended to provide a contribution to the developing field of individual differences and, more specifically,

to present an analysis of individual difference variables which appear to moderate or interact between the facets of task structure and psychological outcomes. While many questions have been at least partially answered, this research and the review of related research offer numerous areas for further investigation. The recommendations concerning future research avenues presented in this section merit further scientific investigation and would benefit from alternative research designs and statistical approaches.

The analysis of the relationship between individual differences and task structure with psychological outcomes suggests that there are additional variables which should be investigated. While there are a multitude of variables which can be considered for this purpose, individual need strengths (Turner and Lawrence, 1965; Hackman and Lawler, 1971; Wanous, 1974; and Hackman and Oldham, 1975) should be added as moderators of employee reactions to their task and work environment to determine which set of predictors explain more of the variance in psychological outcomes. At the present time, no published research findings incorporate both personality and individual need strength variables into the same research design. With additional reliability and validity findings of both need strength and personality variables available across organizations, the answer to the question: "What is it about different people that is responsible for the effects and the circumstances under which certain kinds of participation, reward systems, task structure, leadership styles and the like does and does not work?" might become clearer.

Together with this study and others (Turner and Lawrence, 1965; Hackman and Lawler, 1971; Wanous, 1974; Stinson and Johnson, 1975), it is pretty well documented that individual differences moderate the way people respond to various aspects of the formal organization and to the practices within them; however, few studies have utilized multiple predictors within each set of independent, moderator, and dependent variables. This is due mainly to the difficulty of testing for possible interaction and the methodological and analytical complexity of the problem stemming from multiple predictors within each set. There is a dire need with organizational and psychological research for more multivariate designs utilizing more complex analytical techniques. With the use of these complex multivariate approaches that allow for interactions among different sets of predictors (e.g., canonical analysis and MCA), it is possible to test for the interaction between age, need for achievement, and upward influence with overall satisfaction. It is possible that these multiple sets of predictors might account for fifty percent of the variance in overall satisfaction. Cohen (1968) suggests that such multivariate methods seem warranted for the examination of interaction effects among many sets of predictors. Only through the use of multivariate designs with multiple sets of predictors will it be possible to completely understand how individual differences, demographic variables and task structure moderate employee responses to organizational practices.

The third area for future research involves the investigation of employees' own perceptions of their objective task structure

versus objective observation by outsiders or other researchers.

"It can be argued, of course, that when the intent is to predict or understand employee attitudes or behavior at work, employee ratings of the job dimensions should be used, since it is the employee's own perception of the objective job that is causal of his reactions to it" (Hackman and Oldham, 1975, p. 169). In concise terms, regardless of the actual amount of upward influence or autonomy a worker has in his job, a worker's reactions to that job will be affected by how much he actually perceives he has. Nevertheless, objective ratings of the job are important too (Jenkins, et al., 1975). If quality of work or other experimental projects involving job redesign are to be planned on the amount of participation or autonomy a worker perceives he has, it is important to rate by observation those same jobs to know the amount of correlation between the two separate measures of the same job. Jenkins, et al. (1975) found 32 of 59 measures to exhibit empirical agreement between observers when objective job ratings were made at the same time. Two recent studies involving similar facets of task structure (London and Klimoski, 1975 and Brief and Aldag, 1975) utilize self-report measures and fail to mention how the relevancy of perceptual versus objective ratings might be resolved.

Another research trail needing investigation is comparative studies between two organizations (e.g., XYZ Valves and Beth). Even though the present research involved a large sample with over two hundred jobs from two different organizations, it is still

necessary to investigate the differences between an industrial and public sector sample. Such differences such as sex, amount of task structure, rural-urban, task feedback and task identity might further the needed conceptualization and understanding required before more theories of job enrichment or job redesign are advanced. Then, too, such a comparative study over time might further the question of causal prediction involving expectancy theories and other theories of motivation. Controlling for unwanted variances and increasing the number of multiple predictors, through the use of multivariate designs that might possibly interact to determine the satisfaction-performance dilemma, the various theories of motivation might be able to validate the effects attributable to causation. However, organizational and psychological research need to pull away from studies relating attitudes to attitudes. Future meaningful research must relate attitudes and behaviors to performance outcomes.

Recommendations for Organizational Practice

Even though the development of limited prescriptions for organizational practice was not the primary aim of the theoretical conceptualizations or the collection of empirical findings that have been described in this study, it is felt necessary to try to see where the theory and empirical findings would lead us if they were utilized for organizational practice. In this concluding section, the following list of recommendations are offered as suggestions for organizations to consider:

1. Formal organizations should press for "individualizing" the organization along these lines.

a. The Job. If organizations are able to match people to the tasks they perform, an improvement in organizational effectiveness might result. This involves organizations being committed to personnel testing and selection procedures plus periodic survey assessment of:

1. The values, beliefs, and perceptions people hold as "truths".
2. Individual differences and their interactions with task structure, technology, organizational structure, leadership, demographic variables, and work group behavior.
3. The facets of overall, job and pay satisfaction.
4. Specific hard measures of absenteeism, voluntary and non-voluntary turnover, tardiness, accidents and illnesses, grievances and strikes.
5. Performance measures such as amount of output and quality of output.

b. Reward Systems. If different people respond differently to different organizational practices, financial and non-financial reward systems tied to performance might possibly stimulate increased satisfaction and improved performance.

c. Leadership and the Work Group. If different people within a work group respond to different styles of leadership (e.g., democratic versus authoritarian), it might behoove organizations to find out the appropriate method of managing given certain personal and personality characteristics of the work group and the leader.

2. Organizations should not automatically conclude that all employees want and desire enlarged or enriched jobs that are less specialized and have less departmentalization.

This study should be viewed as linking the areas of research and theory with the applied area of job design. It has shown that man is complex and therefore future research studies will need to concentrate on multivariate research designs allowing for interactions among variables or sets of variables. Together with more complex research designs and valid measures of "hard" or key variances (absences, turnover, productivity, etc.), the behavioral science literature and organizational practice will be more able to work as a team in order to advance the quality of working life and to affect governmental policy making.

APPENDIX



**SURVEY
RESEARCH
CENTER**

**INSTITUTE FOR
SOCIAL RESEARCH
THE UNIVERSITY
OF MICHIGAN
ANN ARBOR,
MICHIGAN 48106**

EXHIBIT A: STUDY QUESTIONNAIRE

October, 1974

Dear Beth Employee:

This questionnaire is designed to find out how people in the hospital feel about their jobs, their co-workers, their pay, their supervisors and the working conditions in the Ohio facility. The results of this questionnaire will be used to help the people at the hospital to learn about the current perceptions and feelings of people here. If it is to be useful, it is important that you answer each question frankly and honestly. There are no right or wrong answers; only best answers, those which accurately reflect your true feelings.

Beth hospital is sponsoring this project and is encouraging its employees to fill out the questionnaire on hospital time. In addition, the administration has committed themselves to feeding back the results of this questionnaire to all employees in the near future.

The answers to the questions in this questionnaire will be processed by computers and summarized in statistical form so that your responses will remain confidential. No one at the hospital will have access to any information about any individual employee or to your answers on this questionnaire. All individual questionnaires will be collected by University of Michigan researchers and returned to Ann Arbor, Michigan. The questionnaires will remain there under the confidential safeguards of the Institute for Social Research and The University of Michigan.

A number is attached to the following page. This number is an identification number assigned to you by us. The one and only list which matches your name and this number is in our confidential files at The University of Michigan. No one at Beth will ever see that list of your questionnaire. The sole purpose of these identification numbers is to enable us to make comparisons of your responses on this questionnaire with the responses you may make to future questionnaires. They will not be used to identify individuals for any other purpose. At no time will we ever discuss your individual answers with anyone.

This is a long questionnaire. Some of the questions may seem repetitive. Questions which appear to be similar are designed to measure different aspects of an issue and the degree of your feelings. When a question or a statement refers to "your hospital" or "this organization", we are asking about Beth hospital. Please think about the organization where you presently work when you answer those questions.

Thank you in advance for your cooperation. We hope that you will find this questionnaire interesting and thought provoking.

Sincerely,

**Barry A. Macy
Study Director**

EXHIBIT A (continued)

PART I

The following information is needed to help us with the statistical analysis of this survey. This information will allow comparisons among different groups of employees and comparisons with similar employees in other organizations.

All of your responses are strictly confidential; individual responses will not be seen by anyone within this organization. We appreciate your help in providing this important information . . .

Remember please to completely blot out the response that applies.

- | | |
|---|---|
| <p>1. What is your classification? 1:23</p> <p>[1] Full-time hourly</p> <p>[2] Part-time hourly</p> <p>[3] Salaried - nonsupervisory</p> <p>[4] Salaried - supervisory</p> | <p>4. What was your age on your last birthday? 1:26</p> <p>[1] Under 20</p> <p>[2] 21 - 25 years</p> <p>[3] 26 - 30 years</p> <p>[4] 31 - 35 years</p> <p>[5] 36 - 40 years</p> <p>[6] 41 - 45 years</p> <p>[7] 46 - 55 years</p> <p>[8] 56 years or older</p> |
| <p>2. How long have you worked for Beth Hospital? 1:24</p> <p>[1] Less than 30 days</p> <p>[2] 1 - 3 months</p> <p>[3] 4 - 11 months</p> <p>[4] 1 - 3 years</p> <p>[5] 4 - 5 years</p> <p>[6] 6 - 10 years</p> <p>[7] 11 years or more</p> | <p>5. How long have you been in your <u>present</u> job at Beth Hospital? 1:27</p> <p>[1] Less than 30 days</p> <p>[2] 1 - 3 months</p> <p>[3] 4 - 11 months</p> <p>[4] 1 - 3 years</p> <p>[5] 4 - 5 years</p> <p>[6] 6 - 10 years</p> <p>[7] 11 - 19 years</p> <p>[8] 20 years or more</p> |
| <p>3. What was the size of the community in which you spent the largest portion of your life up to the time you finished high school? 1:25</p> <p>[1] A farm, ranch, or home in the country (rural area)</p> <p>[2] A small town in the country (rural area)</p> <p>[3] A suburban town near a city</p> <p>[4] A small city (less than 100,000 people)</p> <p>[5] A large city (more than 100,000 people)</p> | |

EXHIBIT A (continued)

6. What is the size of the community that best describes the location of your current home or residence? 1:28
- 11 A farm, ranch or home in the country (rural area)
- 12 A small town in the country (rural area)
- 13 A suburban town near a city
- 14 A small city (less than 100,000 people)
- 15 A large city (more than 100,000 people)
9. Are you - (blot out one) 1:31
- 11 Black
- 12 Oriental
- 13 American Indian
- 14 Spanish surname
- 15 White
- 16 None of the above
7. What is your educational level? (indicate highest completed) 1:29
- 11 Some elementary school (grades 1 - 7)
- 12 Completed elementary school (8 grades)
- 13 Some high school (9 - 11 years)
- 14 Graduated from high school or G.E.D.
- 15 Some college or technical training beyond high school (1 - 3 years)
- 16 Graduated from college (B.A., B.S., or other bachelors degree)
- 17 Some graduate school
- 18 Graduate degree (Masters, Ph.D., M.D., etc.)
10. How many hours do you usually work per week? 1:32
- 11 30 - 34
- 12 35 - 39
- 13 40 - 44
- 14 45 - 49
- 15 50 - 54
- 16 55 - 59
- 17 60 - 64
- 18 65 and over
8. Which of the following ranges is nearest to your total income from your job last year? 1:30
- 11 Under \$4,000
- 12 \$4,000 - 5,999
- 13 \$6,000 - 7,999
- 14 \$8,000 - 9,999
- 15 \$10,000 - 12,999
- 16 \$13,000 - 15,999
- 17 \$16,000 - 19,999
- 18 \$20,000 or more
11. Are you: 1:33
- 11 Female
- 12 Male
12. Is your income the primary source of financial support for your immediate family? 1:34
- 11 Yes
- 12 No

EXHIBIT A (continued)

13. Which of the following shifts do you regularly work? 1:35

- ☐ 1 First shift
- ☐ 2 Second shift
- ☐ 3 Third shift

14. What classification are you? 1:36

- ☐ 1 RN's
- ☐ 2 LPN's
- ☐ 3 Aid's
- ☐ 4 Orderly's
- ☐ 5 Technician's
- ☐ 6 Clerical and/or Secretarial
- ☐ 7 None of the above

15. What is your marital status? 1:37

- ☐ 1 Married
- ☐ 2 Widowed
- ☐ 3 Separated
- ☐ 4 Divorced
- ☐ 5 Never Married

16. How old were you on your last birthday? 1:38-39

EXHIBIT A (continued)

PART II

HERE IS A LIST OF STATEMENTS WHICH COULD BE MADE ABOUT YOUR JOB. FOR EACH STATEMENT, PLEASE BLOT OUT THE APPROPRIATE RESPONSE.

TO WHAT EXTENT IS THE STATEMENT TRUE OF YOUR JOB NOW?

	ALWAYS	FREQUENTLY	OCCASIONALLY	SELDOM	NEVER	
17. The opportunity to complete the work I start.	A	F	O	S	N	1:40
18. I do the same things on my job.	A	F	O	S	N	1:41
19. My job requires me to work with many different people.	A	F	O	S	N	1:42
20. How often do you see projects or jobs through to completion.	A	F	O	S	N	1:43
21. The feeling that I know whether I am performing my job well or poorly.	A	F	O	S	N	1:44
22. I work in the same spot all day.	A	F	O	S	N	1:45
23. I do a lot of different things in a day.	A	F	O	S	N	1:46
24. To what extent do you find out how well you are doing on the job as you are working.	A	F	O	S	N	1:47
25. The opportunity to find out how well I am doing in my job.	A	F	O	S	N	1:48
26. The opportunity to do a job from the beginning to end (i.e., the chance to do a whole job).....	A	F	O	S	N	1:49
27. My supervisor checks on me while I am working.	A	F	O	S	N	1:50
28. My supervisor leaves me alone unless I want help.	A	F	O	S	N	1:51
29. I have a lot of say over what happens on my job.	A	F	O	S	N	1:52
30. My job requires me to repeat the same activities over and over.	A	F	O	S	N	1:53
31. My supervisor tells me exactly how to do my job.	A	F	O	S	N	1:54
32. To what extent do you do a "whole" piece of work (as opposed to doing part of a job which is finished by some other employee).....	A	F	O	S	N	1:55
33. There are many different ways of doing my job....	A	F	O	S	N	1:56
34. On my job I make a lot of decisions on my own.	A	F	O	S	N	1:57
35. My supervisor lets me set my own work pace.	A	F	O	S	N	1:58

EXHIBIT A (continued)

HERE IS A LIST OF DECISIONS WHICH GET
MADE AT WORK. FOR EACH DECISION,
PLEASE INDICATE:

HOW MUCH OF A SAY DO YOU HAVE IN
MAKING THESE DECISIONS NOW?

	NO SAY AT ALL	A LITTLE SAY	A MODERATE SAY	A GREAT DEAL OF SAY	I MAKE THIS DECISION BY MYSELF	
36. Deciding how equipment and resources will be allocated.	1	2	3	4	5	1:59
37. Establishing your scheduled hours of work.	1	2	3	4	5	1:60
38. Deciding how fast the work should be done.	1	2	3	4	5	1:61
39. Selecting new workers to fill vacancies in the group.....	1	2	3	4	5	1:62
40. Determining the work policies that directly affect the group.	1	2	3	4	5	1:63
41. Deciding how the work task/s will be divided up among people in your work group.	1	2	3	4	5	1:64
42. Deciding who works overtime.	1	2	3	4	5	1:65
43. Deciding how the work will actually be performed, the methods used, etc.	1	2	3	4	5	1:66
44. Deciding how much work should be done.	1	2	3	4	5	1:67
45. Setting quality standards.	1	2	3	4	5	1:68

EXHIBIT A (continued)
PART III

HERE ARE SOME STATEMENTS REGARDING HOW YOU MIGHT FEEL ABOUT YOURSELF OR YOUR WORK. THERE IS NO RIGHT ANSWER; EACH PERSON WILL FEEL SOMEWHAT DIFFERENTLY. PLEASE INDICATE HOW MUCH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY BLOTTING OUT THE APPROPRIATE ANSWER.

	STRONGLY AGREE	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	STRONGLY DISAGREE	
46. I take a positive attitude toward myself.	SA	A	N	D	SD	1:69
47. People should be allowed to do their job with minimal supervision.	SA	A	N	D	SD	1:70
48. In general, I try to make every minute count.	SA	A	N	D	SD	1:71
49. Often I attend social gatherings just to be with others.	SA	A	N	D	SD	1:72
50. It never bothers me to go into a room by myself when other people have already gathered and are talking.	SA	A	N	D	SD	1:73
51. I would quit this job at once if I could get anything else to do.	SA	A	N	D	SD	1:74
52. I almost always feel that I must do the best at what I am doing.	SA	A	N	D	SD	1:75
53. I consider myself a good mixer.	SA	A	N	D	SD	1:76
54. I prefer to make my own decisions without checking with anyone else.	SA	A	N	D	SD	1:77
55. It doesn't usually bother me to meet strangers.	SA	A	N	D	SD	1:78
56. When I do my work I prefer to do it according to the hospital rules.	SA	A	N	D	SD	1:79
57. I have often thought about taking a job with another hospital.	SA	A	N	D	SD	<u>1:80</u>
58. Most people don't realize the extent to which their lives are controlled by accidental happenings. ..	SA	A	N	D	SD	2:09
59. Every day I try to accomplish something worthwhile.	SA	A	N	D	SD	2:10
60. I know exactly what I want out of life.	SA	A	N	D	SD	2:11
61. I always do my best whether I am alone or with someone.	SA	A	N	D	SD	2:12
62. I wish I could be as happy as others.	SA	A	N	D	SD	2:13
63. I would take any other job in which I could earn as much as I am earning now.	SA	A	N	D	SD	2:14
64. I think I am no good at all.	SA	A	N	D	SD	2:15

EXHIBIT A (continued)

(cont'd). AGREE OR DISAGREE . . .

	STRONGLY AGREE	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	STRONGLY DISAGREE	
65. I prefer to decide how my work should be done rather than having someone tell me how to do it.	SA	A	N	D	SD	2:16
66. Written orders from higher ups should be followed unquestioningly.	SA	A	N	D	SD	2:17
67. Going through proper channels helps to make sure a job is done right.	SA	A	N	D	SD	2:18
68. I like a great deal of variety in my work.	SA	A	N	D	SD	2:19
69. I would not change my job for any other job.....	SA	A	N	D	SD	2:20
70. I think even small matters should be referred to someone higher up for a final answer.	SA	A	N	D	SD	2:21
71. It is impossible for me to believe that chance or luck plays an important role in my life. ...	SA	A	N	D	SD	2:22
72. I find a repetitious job very monotonous.	SA	A	N	D	SD	2:23
73. Many of the unhappy things in people's lives are partly due to bad luck.	SA	A	N	D	SD	2:24
74. I don't like to do the same job in the same way every day.	SA	A	N	D	SD	2:25
75. I am not eager to change jobs, but I would if I could get a better job.	SA	A	N	D	SD	2:26
76. What happens to me is my own doing.	SA	A	N	D	SD	2:27
77. Sometimes I feel that I don't have enough control over the direction my life is taking.	SA	A	N	D	SD	2:28
78. I generally have confidence that when I make plans I will be able to carry them out.	SA	A	N	D	SD	2:29
79. Any decision I make should have my boss' approval.	SA	A	N	D	SD	2:30
80. Rules should be written to prevent employees from leaving their work areas without permission.	SA	A	N	D	SD	2:31
81. Who gets to be the boss often depends on who was lucky enough to be in the right place first. ...	SA	A	N	D	SD	2:32
82. I like doing a different job every few days.	SA	A	N	D	SD	2:33
83. I have often found that what is going to happen will happen.	SA	A	N	D	SD	2:34
84. People's misfortunes result from the mistakes they make.	SA	A	N	D	SD	2:35
85. Becoming a success is a matter of hard work, luck has little or nothing to do with it.	SA	A	N	D	SD	2:36
86. Supervisors should constantly check for rule violations.	SA	A	N	D	SD	2:37
87. There is really no such thing as luck.	SA	A	N	D	SD	2:38
88. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.	SA	A	N	D	SD	2:39
89. In the long run, people get the respect they deserve in this world.	SA	A	N	D	SD	2:40

EXHIBIT A (continued)

HOW IS YOUR JOB AT THE PRESENT TIME? DO YOU THINK IT IS VERY GOOD, GOOD, FAIR, POOR, OR VERY POOR? PLEASE READ EACH OF THE FOLLOWING RESPONSES THAT DESCRIBES SOMETHING ABOUT YOUR JOB. BLOT OUT THE SYMBOL THAT BEST DESCRIBES YOUR JOB.

	VERY GOOD	GOOD	FAIR	POOR	VERY POOR	
90. Management's interest in welfare of employees.	VG	G	F	P	VP	2:41
91. This hospital as a place to work.	VG	G	F	P	VP	2:42
92. Appreciation shown here for my work.	VG	G	F	P	VP	2:43
93. Fair treatment of employees by management.	VG	G	F	P	VP	2:44
94. This hospital's reputation in the community.	VG	G	F	P	VP	2:45
95. Feeling that my job is regarded as important.	VG	G	F	P	VP	2:46
96. Management's planning for the future.	VG	G	F	P	VP	2:47
97. Communications from hospital to its employees. ...	VG	G	F	P	VP	2:48
98. Credit given by my supervisor for doing a good job.	VG	G	F	P	VP	2:49
99. Management's understanding of workers' problems. ..	VG	G	F	P	VP	2:50
100. My pride in working for this hospital.	VG	G	F	P	VP	2:51
101. Credit given by hospital for good work.	VG	G	F	P	VP	2:52

HOW IS YOUR JOB IN COMPARISON WITH WHAT YOU THINK IT SHOULD BE? IS IT MUCH BETTER THAN YOU EXPECT, BETTER THAN YOU EXPECT, ABOUT THE SAME AS YOU EXPECT, POORER THAN YOU EXPECT, OR MUCH POORER THAN YOU EXPECT?

	MUCH BETTER THAN YOU EXPECTED	BETTER THAN YOU EXPECTED	SAME AS EXPECTED	POORER THAN EXPECTED	MUCH POORER THAN EXPECTED	
102. Satisfaction with my present job.	MB	B	S	P	MP	2:53
103. The amount of money I am paid.	MB	B	S	P	MP	2:54
104. Pay here compared with my friends' jobs.	MB	B	S	P	MP	2:55
105. Liking for the work I am doing here.	MB	B	S	P	MP	2:56
106. The pay for overtime.	MB	B	S	P	MP	2:57
107. Interesting work to do.	MB	B	S	P	MP	2:58
108. My happiness in my work compared to most people.	MB	B	S	P	MP	2:59
109. Pay compared to what my work is worth.	MB	B	S	P	MP	2:60

EXHIBIT A (continued)

September, 1974



SURVEY
RESEARCH
CENTER

INSTITUTE FOR
SOCIAL RESEARCH
THE UNIVERSITY
OF MICHIGAN
ANN ARBOR,
MICHIGAN 48106

Dear XYZ Valves Employee:

This questionnaire is designed to find out how people in the Valves organization of XYZ feel about their jobs, their co-workers, their pay, their supervisors and the working conditions in the Texas facility. The results of this questionnaire will be used to help the people at the organization to learn about the current perceptions and feelings of people here. If it is to be useful, it is important that you answer each question frankly and honestly. *There are no right or wrong answers; only best answers, those which accurately reflect your true feelings.*

XYZ is sponsoring this project and is encouraging its employees to fill out the questionnaire on company time. In addition, the Valves organization has committed themselves to feeding back the results of this questionnaire to all employees in the near future.

The answers to the questions in this questionnaire will be processed by computers and summarized in statistical form so that your responses will remain confidential. No one at the organization will have access to any information about any individual employees or to your answers on this questionnaire. All individual questionnaires will be collected by University of Michigan researchers and returned to Ann Arbor, Michigan. The questionnaires will remain there under the confidential safeguards of the Institute for Social Research and The University of Michigan.

A number is attached to the following page. This number is an identification number assigned to you by us. The one and only list which matches your name and this number is in our confidential files at The University of Michigan. No one at XYZ will ever see that list or your questionnaire. The sole purpose of these identification numbers is to enable us to make comparisons of your responses on this questionnaire with the responses you may make to future questionnaires. They will not be used to identify individuals for any other purpose. At no time will we ever discuss your individual answers with anyone.

This is a long questionnaire. Some of the questions may seem repetitive. Questions which appear to be similar are designed to measure different aspects of an issue and the degree of your feelings. When a question or a statement refers to "your company" or "this organization", we are asking about XYZ Valves. We are not asking about the corporation. Please think about the organization where you presently work when you answer these questions.

Thank you in advance for your cooperation. We hope that you will find this questionnaire interesting and thought provoking.

Sincerely,

Barry Macy
Barry A. Macy
Study Director

SC

EXHIBIT A (continued)

GENERAL INSTRUCTIONS

This questionnaire contains a number of questions and statements about you, your job, and related issues at the XYZ facility. Please answer the following questions keeping in mind the kind of work you do and the experiences that you have had working here. Most of these questions ask that you blot out one of several numbers or letters that are offered in an answer scale next to the question. You are to choose the one number or letter that best matches the description of how you feel about this question.

For example, if you were asked how much you agree with the statement, "I enjoy the weather in Texas," and you feel that you strongly agree, you would blot out the number [7] under "strongly agree" like this:

STRONGLY DISAGREE
DISAGREE
SLIGHTLY DISAGREE
NEITHER AGREE
NOR DISAGREE
SLIGHTLY AGREE
AGREE
STRONGLY AGREE

I enjoy the weather in Texas. [1] [2] [3] [4] [5] [6] [7]

If you feel that you disagree with the statement, you would then blot out number [2] under "disagree."

Please note that the scale descriptions may be different, in different parts of the questionnaire. For example, they may ask not whether you agree or disagree, but perhaps whether you are satisfied or dissatisfied, or whether you think something to be likely or not likely to happen, etc. So, be sure to read the special instructions that appear in boxes before each set of questions and the answer scale descriptions before choosing your answers.

Your responses will be read by an optical scan reader. It is important that you blot out your response and that no other pencil markings appear on the questionnaire. So, please follow these few simple directions:

- Use a No. 2 black pencil
- Blot out the number or letter chosen
- Stay within the brackets surrounding the number or letter
- Make no other markings
- Erase cleanly any answer you wish to change
- Do not fold the questionnaire

When you have finished, please place the questionnaire in the envelope, remove your name from the outside, and return the envelope to the designated place or person.

Blank 1:01-07
Deck 1:08

03033

4

EXHIBIT A (continued)

PART I

The following information is needed to help us with the statistical analysis of this survey. This information will allow comparisons among different groups of employees and comparisons with similar employees in other organizations.

All of your responses are strictly confidential; individual responses will not be seen by anyone within this organization. We appreciate your help in providing this important information . . .

Remember please to completely blot out the response that applies.

— 0	1. What is your wage classification?	1:09	4. What was your age on your last birthday?	1:12
— 0	[1] Hourly		[1] Under 20	
— 0	[2] Salaried, non-exempt (paid for overtime)		[2] 21 - 25 years	
— 0	[3] Salaried, exempt (not paid for overtime)		[3] 26 - 30 years	
— 3	[4] Salaried, exempt - supervisory		[4] 31 - 35 years	
— 3			[5] 36 - 40 years	
— 0	2. How long have you worked for XYZ Valves?	1:10	[6] 41 - 45 years	
— 0	[1] Less than 30 days		[7] 46 - 55 years	
— 6	[2] 1 - 3 months		[8] 56 years or older	
— 6	[3] 4 - 11 months			
— 0	[4] 1 - 3 years		5. How long have you been in your <u>present</u> job at XYZ Valves?	1:13
— 0	[5] 4 - 5 years		[1] Less than 30 days	
— 0	[6] 6 - 10 years		[2] 1 - 3 months	
— 3	[7] 11 years or more		[3] 4 - 11 months	
— 3	3. What was the size of the community in which you spent the largest portion of your life up to the time you finished high school?	1:11	[4] 1 - 3 years	
— 0	[1] On a farm or ranch		[5] 4 - 5 years	
— 6	[2] In the country, not on a farm or ranch		[6] 6 - 10 years	
— 0	[3] A suburban town near a city		[7] 11 years or more	
— 0	[4] A small city (less than 100,000 people)		6. Are you married?	1:14
— 2	[5] A large city (more than 100,000 people)		[1] Yes	
			[2] No	

— 03038

4

EXHIBIT A (continued)

- 3 7. What is the size of the community that best describes the location of your current home or residence? 1:15
- 0
- 0 |1| On a farm or ranch
- 0 |2| In the country, not on a farm or ranch
- 0 |3| A suburban town near a city
- 6 |4| A small city (less than 100,000 people)
- 3 |5| A large city (more than 100,000 people)
- 0 8. What is your educational level? (indicate highest completed) 1:16
- 0 |1| Some elementary school (grades 1 - 7)
- 0 |2| Completed elementary school (8 grades)
- 0 |3| Some high school (9 - 11 years)
- 0 |4| Graduated from high school or G.E.D.
- 0 |5| Some college or technical training beyond high school (1 - 3 years)
- 0 |6| Graduated from college (B.A., B.S., or other bachelors degree)
- 6 |7| Some graduate school
- 4 |8| Graduate degree (Masters, Ph.D., M.D., etc.)
- 3 9. Which of the following ranges is nearest to your total income from your job last year? 1:17
- 0
- 6 |1| Under \$4,000
- 6 |2| \$4,000 - 5,999
- 6 |3| \$6,000 - 7,999
- 0 |4| \$8,000 - 9,999
- 0 |5| \$10,000 - 12,999
- 6 |6| \$13,000 - 15,999
- 6 |7| \$16,000 - 19,999
- 4 |8| \$20,000 or more
- 2
- 10. Are you - (blot out one) 1:18
- |1| Black
- |2| Oriental
- |3| American Indian
- |4| Spanish surname
- |5| None of the above
- 11. How many hours do you usually work per week? 1:19
- |1| 30 - 34
- |2| 35 - 39
- |3| 40 - 44
- |4| 45 - 49
- |5| 50 - 54
- |6| 55 - 59
- |7| 60 - 64
- |8| 65 and over
- 12. Are you: 1:20
- |1| Female
- |2| Male
- 13. Is your income the primary source of financial support for your immediate family? 1:21
- |1| Yes
- |2| No

— 0303A

4

EXHIBIT A (continued)

- 6 14. Which of the following shifts do you regularly work?

1:22

- 6 |1| First shift
 — 6 |2| Second shift
 — 6 |3| Third shift

15. What shop classification are you?

1:23

- 6 |1| First classification
 — 6 |2| Second classification
 — 6 |3| Third classification
 — 6 |4| Fourth classification
 — 5 |5| None of the above

16. What department are you in? (Please write your department name on the line below and also blot out the appropriate numbers below)

1:24-26

NAME _____

- | | | | |
|-----|---|---|---|
| — 5 | 0 | 0 | 0 |
| — 5 | 1 | 1 | 1 |
| — 5 | 2 | 2 | 2 |
| — 5 | 3 | 3 | 3 |
| — 5 | 4 | 4 | 4 |
| — 5 | 5 | 5 | 5 |
| — 5 | 6 | 6 | 6 |
| — 5 | 7 | 7 | 7 |
| — 5 | 8 | 8 | 8 |
| — 4 | 9 | 9 | 9 |
| — 2 | | | |
| — | | | |

— 03038

4

EXHIBIT A (continued)

— 1

PART II

HERE IS A LIST OF STATEMENTS WHICH COULD BE MADE ABOUT YOUR JOB. FOR EACH STATEMENT, PLEASE BLOT OUT THE APPROPRIATE RESPONSE.

TO WHAT EXTENT IS THE STATEMENT TRUE OF YOUR JOB NOW?

		ALWAYS	FREQUENTLY	OCCASIONALLY	SELDOM	NEVER	
— 1	17. The opportunity to complete the work I start.	[A]	[F]	[O]	[S]	[N]	1:27
— 1	18. I do the same things on my job.	[A]	[F]	[O]	[S]	[N]	1:28
— 1	19. My job requires me to work with many different people.	[A]	[F]	[O]	[S]	[N]	1:29
— 1	20. How often do you see projects or jobs through to completion.	[A]	[F]	[O]	[S]	[N]	1:30
— 1	21. The feeling that I know whether I am performing my job well or poorly.	[A]	[F]	[O]	[S]	[N]	1:31
— 1	22. I work in the same spot all day.	[A]	[F]	[O]	[S]	[N]	1:32
— 1	23. I do a lot of different things in a day.	[A]	[F]	[O]	[S]	[N]	1:33
— 1	24. To what extent do you find out how well you are doing on the job as you are working.	[A]	[F]	[O]	[S]	[N]	1:34
— 1	25. The opportunity to find out how well I am doing in my job.	[A]	[F]	[O]	[S]	[N]	1:35
— 1	26. The opportunity to do a job from the beginning to end (i.e., the chance to do a whole job)....	[A]	[F]	[O]	[S]	[N]	1:36
— 1	27. My supervisor checks on me while I am working.	[A]	[F]	[O]	[S]	[N]	1:37
— 1	28. My supervisor leaves me alone unless I want help.	[A]	[F]	[O]	[S]	[N]	1:38
— 1	29. I have a lot of say over what happens on my job.	[A]	[F]	[O]	[S]	[N]	1:39
— 1	30. My job requires me to repeat the same activities over and over.	[A]	[F]	[O]	[S]	[N]	1:40
— 4	31. My supervisor tells me exactly how to do my job.	[A]	[F]	[O]	[S]	[N]	1:41
— 1	32. To what extent do you do a "whole" piece of work (as opposed to doing part of a job which is finished by some other employee)....	[A]	[F]	[O]	[S]	[N]	1:42
— 1	33. There are many different ways of doing my job....	[A]	[F]	[O]	[S]	[N]	1:43
— 1	34. On my job I make a lot of decisions on my own.	[A]	[F]	[O]	[S]	[N]	1:44
— 2	35. My supervisor lets me set my own work pace.	[A]	[F]	[O]	[S]	[N]	1:45

03038

4

EXHIBIT A (continued)

HERE IS A LIST OF DECISIONS WHICH GET
MADE AT WORK. FOR EACH DECISION,
PLEASE INDICATE:

HOW MUCH OF A SAY DO YOU HAVE IN
MAKING THESE DECISIONS NOW?

		NO SAY AT ALL	A LITTLE SAY	A MODERATE SAY	A GREAT DEAL OF SAY	I MAKE THIS DECISION BY MYSELF	
— 1	36. Deciding how equipment and resources will be allocated.	1	2	3	4	5	1:46
— 1	37. Establishing your scheduled hours of work.	1	2	3	4	5	1:47
— 1	38. Deciding how fast the work should be done.	1	2	3	4	5	1:48
— 1	39. Selecting new workers to fill vacancies in the group.....	1	2	3	4	5	1:49
— 1	40. Determining the work policies that directly affect the group.	1	2	3	4	5	1:50
— 1	41. Deciding how the work task/s will be divided up among people in your work group.	1	2	3	4	5	1:51
— 1	42. Deciding who works overtime.	1	2	3	4	5	1:52
— 1	43. Deciding how the work will actually be performed, the methods used, etc.	1	2	3	4	5	1:53
— 1	44. Deciding how much work should be done.	1	2	3	4	5	1:54
— 1	45. Setting quality standards.	1	2	3	4	5	1:55

PART III

HERE ARE SOME STATEMENTS REGARDING HOW YOU
MIGHT FEEL ABOUT YOURSELF OR YOUR WORK.
THERE IS NO RIGHT ANSWER; EACH PERSON WILL
FEEL SOMEWHAT DIFFERENTLY. PLEASE INDICATE
HOW MUCH YOU AGREE OR DISAGREE WITH THE
FOLLOWING STATEMENTS BY BLOTTING OUT THE
APPROPRIATE ANSWER.

		STRONGLY AGREE	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	STRONGLY DISAGREE	
— 1	46. I take a positive attitude toward myself.	SA	A	N	D	SD	1:56
— 1	47. People should be allowed to do their job with minimal supervision.	SA	A	N	D	SD	1:57
— 1	48. In general, I try to make every minute count.	SA	A	N	D	SD	1:58
— 4	49. Often I attend social gatherings just to be with others.	SA	A	N	D	SD	1:59
— 1	50. It never bothers me to go into a room by myself when other people have already gathered and are talking.	SA	A	N	D	SD	1:60
— 4							
— 2							
—							

03038

4

EXHIBIT A (continued)

(cont'd) AGREE OR DISAGREE . . .

			STRONGLY AGREE	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	STRONGLY DISAGREE	
—	1	51. I would quit this job at once if I could get any- thing else to do.	[SA]	[A]	[N]	[D]	[SD]	1:61
—	1	52. I almost always feel that I must do the best at what I am doing.	[SA]	[A]	[N]	[D]	[SD]	1:62
—	1	53. I consider myself a good mixer.	[SA]	[A]	[N]	[D]	[SD]	1:63
—	1	54. I prefer to make my own decisions without checking with anyone else.	[SA]	[A]	[N]	[D]	[SD]	1:64
—	1	55. It doesn't usually bother me to meet strangers.	[SA]	[A]	[N]	[D]	[SD]	1:65
—	1	56. When I do my work I prefer to do it according to the company rules.	[SA]	[A]	[N]	[D]	[SD]	1:66
—	1	57. I have often thought about taking a job with another company.	[SA]	[A]	[N]	[D]	[SD]	1:67
—	1	58. Most people don't realize the extent to which their lives are controlled by accidental happenings. ..	[SA]	[A]	[N]	[D]	[SD]	1:68
—	1	59. Every day I try to accomplish something worthwhile.	[SA]	[A]	[N]	[D]	[SD]	1:69
—	1	60. I know exactly what I want out of life.	[SA]	[A]	[N]	[D]	[SD]	1:70
—	1	61. I always do my best whether I am alone or with someone.	[SA]	[A]	[N]	[D]	[SD]	1:71
—	1	62. I wish I could be as happy as others.	[SA]	[A]	[N]	[D]	[SD]	1:72
—	1	63. I would take any other job in which I could earn as much as I am earning now.	[SA]	[A]	[N]	[D]	[SD]	1:73
—	1	64. I think I am no good at all.	[SA]	[A]	[N]	[D]	[SD]	1:74
—	1	65. I prefer to decide how my work should be done rather than having someone tell me how to do it.	[SA]	[A]	[N]	[D]	[SD]	1:75
—	1	66. Written orders from higher ups should be followed unquestioningly.	[SA]	[A]	[N]	[D]	[SD]	1:76
—	1	67. Going through proper channels helps to make sure a job is done right.	[SA]	[A]	[N]	[D]	[SD]	1:77
—	1	68. I like a great deal of variety in my work.	[SA]	[A]	[N]	[D]	[SD]	1:78
—	1	69. I would not change my job for any other job.....	[SA]	[A]	[N]	[D]	[SD]	1:79
—	1	70. I think even small matters should be referred to someone higher up for a final answer.	[SA]	[A]	[N]	[D]	[SD]	1:80
—	1	71. It is impossible for me to believe that chance or luck plays an important role in my life. ...	[SA]	[A]	[N]	[D]	[SD]	2:11
—	1	72. I find a repetitious job very monotonous.	[SA]	[A]	[N]	[D]	[SD]	2:12
—	2	73. Many of the unhappy things in people's lives are partly due to bad luck.	[SA]	[A]	[N]	[D]	[SD]	2:13

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EXHIBIT A (continued)

(cont'd) AGREE OR DISAGREE . . .

		STRONGLY AGREE	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	STRONGLY DISAGREE	
— 1	74. I don't like to do the same job in the same way every day.	SA	A	N	D	SD	2:14
— 1	75. I am not eager to change jobs, but I would if I could get a better job.	SA	A	N	D	SD	2:15
— 1	76. What happens to me is my own doing.	SA	A	N	D	SD	2:16
— 1	77. Sometimes I feel that I don't have enough control over the direction my life is taking.	SA	A	N	D	SD	2:17
— 1	78. I generally have confidence that when I make plans I will be able to carry them out.	SA	A	N	D	SD	2:18
— 1	79. Any decision I make should have my boss' approval.	SA	A	N	D	SD	2:19
— 1	80. Rules should be written to prevent employees from leaving their work areas without permission.	SA	A	N	D	SD	2:20
— 1	81. Who gets to be the boss often depends on who was lucky enough to be in the right place first.	SA	A	N	D	SD	2:21
— 1	82. I like doing a different job every few days.	SA	A	N	D	SD	2:22
— 1	83. I have often found that what is going to happen will happen.	SA	A	N	D	SD	2:23
— 1	84. People's misfortunes result from the mistakes they make.	SA	A	N	D	SD	2:24
— 1	85. Becoming a success is a matter of hard work, luck has little or nothing to do with it.	SA	A	N	D	SD	2:25
— 1	86. Supervisors should constantly check for rule violations.	SA	A	N	D	SD	2:26
— 1	87. There is really no such thing as luck.	SA	A	N	D	SD	2:27
— 1	88. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.	SA	A	N	D	SD	2:28
— 4	89. In the long run, people get the respect they deserve in this world.	SA	A	N	D	SD	2:29

— 2

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4

EXHIBIT A (continued)

HOW IS YOUR JOB AT THE PRESENT TIME? DO YOU THINK IT IS VERY GOOD, GOOD, FAIR, POOR, OR VERY POOR? PLEASE READ EACH OF THE FOLLOWING RESPONSES THAT DESCRIBES SOMETHING ABOUT YOUR JOB. BLOT OUT THE SYMBOL THAT BEST DESCRIBES YOUR JOB.

		VERY GOOD	GOOD	FAIR	POOR	VERY POOR	
— 1							
— 1	90. Management's interest in welfare of employees.	VG	G	F	P	VP	2:30
— 1	91. This company as a place to work.	VG	G	F	P	VP	2:31
— 1	92. Appreciation shown here for my work.	VG	G	F	P	VP	2:32
— 1	93. Fair treatment of employees by management.	VG	G	F	P	VP	2:33
— 1	94. This company's reputation in the community.	VG	G	F	P	VP	2:34
— 1	95. Feeling that my job is regarded as important.	VG	G	F	P	VP	2:35
— 1	96. Management's planning for the future.	VG	G	F	P	VP	2:36
— 1	97. Communications from company to its employees. ...	VG	G	F	P	VP	2:37
— 1	98. Credit given by my supervisor for doing a good job.	VG	G	F	P	VP	2:38
— 1	99. Management's understanding of workers' problems. ..	VG	G	F	P	VP	2:39
— 1	100. My pride in working for this company.	VG	G	F	P	VP	2:40
— 1	101. Credit given by company for good work.	VG	G	F	P	VP	2:41

HOW IS YOUR JOB IN COMPARISON WITH WHAT YOU THINK IT SHOULD BE? IS IT MUCH BETTER THAN YOU EXPECT, BETTER THAN YOU EXPECT, ABOUT THE SAME AS YOU EXPECT, POORER THAN YOU EXPECT, OR MUCH POORER THAN YOU EXPECT?

		MUCH BETTER THAN YOU EXPECTED	BETTER THAN YOU EXPECTED	SAME AS EXPECTED	POORER THAN EXPECTED	MUCH POORER THAN EXPECTED	
— 1	102. Satisfaction with my present job.	MB	B	S	P	MP	2:42
— 1	103. The amount of money I am paid.	MB	B	S	P	MP	2:43
— 1	104. Pay here compared with my friends' jobs.	MB	B	S	P	MP	2:44
— 1	105. Liking for the work I am doing here.	MB	B	S	P	MP	2:45
— 1	106. The pay for overtime.	MB	B	S	P	MP	2:46
— 1	107. Interesting work to do.	MB	B	S	P	MP	2:47
— 1	108. My happiness in my work compared to most people.	MB	B	S	P	MP	2:48
— 2	109. Pay compared to what my work is worth.	MB	B	S	P	MP	2:49

EXHIBIT B (continued)

Independent Variable: Facets of Task Structure-(Part II)

<u>Variable</u>	<u>Scale</u>	<u>Definition</u>	<u>Items</u>	<u>Reliability</u>	<u>Method</u>	<u>N</u>	<u>Reference</u>	<u>Variable No.</u>
1. AUTONOMY	Always Frequently Occasionally Seldom Never	The degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling his work and in determining the procedures to be used in carrying it out.	1. My supervisor lets me set my own work pace. 2. I have a lot of say over what happens on my job. 3. My supervisor lets me alone unless I want help. 4. On my job I make a lot of decisions on my own. 5. My supervisor checks on me while I am working. 6. My supervisor tells me exactly how to do my job.	.6770 (pre-test)	K-R #3	402	Macy Pre-test (See Exhibit C for item analysis)	145 139 138 144 137 141
2. SKILL VARIETY	Always Frequently Occasionally Seldom Never	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.	1. There are many different ways of doing my job. 2. My job requires me to repeat the same activities over and over. 3. My job requires me to work with many different people. 4. I work in the same spot all day. 5. I do a lot of different things in a day. 6. I do the same things on my job.	.6478 (pre-test)	K-R #3	410	Macy Pre-test (See Exhibit C for item analysis)	143 140 129 132 133 128

Items dropped

2. SKILL VARIETY

7. My job allows me to do a variety of things

222

Note: K-R #3 modified to handle multiple scales with Cronbach's coefficient alpha (O.S.U. data center - C 6.03.012)

EXHIBIT B (continued)

Variable	Scale	Definition	Items	Reliability	Method	N	Reference	Variable No.
3. TASK FEEDBACK	Always	The degree to which carrying out the work activities required by the job results in the employee obtaining information about the effectiveness of his performance.	1. To what extent do you find out how well you are doing on the job as you are working?	(1) above .70	(1) Split-half	(1) 732	(1) Sims & Szilagyi, 1974	134
	Frequently		2. The opportunity to find out how well I am doing on my job.	(2) .75	(2) Spearman-Brown Prophecy	(2) 270	(2) Hackman & Lawler, 1971	135
	Occasionally		3. The feeling that I know whether I am performing my job well or poorly.		Formula Correction of K-R #20			131
4. TASK IDENTITY	Always	The degree to which the job requires the completion of a "whole" and identifiable piece of work--i.e., doing a job from beginning to end with a visible outcome.	1. To what extent do you do a "whole" piece of work (as opposed to doing part of a job which is finished by some other employee)?	(1) above .70	(1) Split-half	(1) 732	(1) Sims & Szilagyi, 1974	142
	Frequently		2. How often do you see projects or jobs through to completion?	(2) .77	(2) Spearman-Brown Prophecy	(2) 270	(2) Hackman & Lawler, 1971	130
	Occasionally		3. The opportunity to do a job from the beginning to end (i.e., the chance to do a whole job).		Formula Correction of K-R #20			136
	Seldom		4. The opportunity to complete work I start.					127
	Never							

EXHIBIT B (continued)

Variable	Scale	Definition	Items	Reliability	Method	N	Reference	Variable No.
5. UPWARD INFLUENCE	No Say	The degree to which the job provides the employee control and influence over others.	1. Deciding how equipment and resources will be allocated.	.8691 (pre-test)	K-R #3	270	Macy Pre-Test (See Exhibit C for item analysis)	146
	Little Say		2. Deciding how the work tasks will be divided up among people in your work group.					151
	Moderate Say		3. Deciding how the work will actually be performed, the methods used, etc.					153
	Great Deal of Say		4. Establishing your scheduled hours of work.					147
	I make the decision myself		5. Deciding how much work should be done.					154
			6. Setting quality standards.					155
			7. Deciding how fast the work should be done.					148
			8. Deciding who works overtime.					152
			9. Selecting new workers to fill vacancies in the group.					149
			10. Determining the work policies that directly affect the group.					150
<hr/>								
Items Dropped								
5. UPWARD INFLUENCE			11. Selecting your own superior.					bbb
			12. Deciding who gets pay increases.					ccc
			13. Deciding who is to be laid off, dismissed or fired.					ddd
			14. Deciding who should be promoted.					eee
			15. Deciding when you work overtime.					fff

Note: K-R #3 modified to handle multiple scales with Cronbach's coefficient alpha (O.S.U. data center - C 6.03.012)

EXHIBIT B (continued)

MODERATOR VARIABLES: INDIVIDUAL DIFFERENCES (Part III)

Variable	Scale	Definition	Items	Reliability	Method	N	Reference	Variable No.
1. INTERNAL- EXTERNAL LIFE ORIENTATION	SA A NA or D D SD	The degree to which individuals have different concepts of a particular role because they, themselves, may differ from each other in terms of their own self-conception, their social class identifications, occupational specialization and experiences, and the positions they occupy.	1. What happens to me is my own doing. 2. It is impossible for me to believe that chance or luck plays an important role in my life. 3. I have often found that what is going to happen will happen. 4. There is really no such thing as luck. 5. In the long run, people get the respect they deserve in this world. 6. Who gets to be the boss often depends on who was lucky enough to be in the right place first. 7. Most people don't realize the extent to which their lives are controlled by accidental happenings. 8. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three. 9. Sometimes I feel that I don't have enough control over the direction my life is taking. 10. Many of the unhappy things in people's lives are partly due to bad luck. 11. People's misfortunes result from the mistakes they make. 12. Becoming a success is a matter of hard work, luck has little or nothing to do with it.	.5789 (pre-test)	K-R #3	403	Macy Pre-test (See Exhibit C for item analysis)	216 211 223 227 229 221 168 228 217 213 224 225

Note: K-R #3 modified to handle multiple scales with Cronbach's coefficient alpha (O.S.U. data center - C 6.03.012)

EXHIBIT B (continued)

Variable	Scale	Definition	Items	Reliability	Method	N	Reference	Variable No.
2. SELF-ESTEEM	SA	The degree to which individuals are confident of their own capacities (i.e., self-confidence) or are critical of one's self (i.e., self-deprecation)	1. I generally have confidence that when I make plans I will be able to carry them out.	.77	Spearman-Brown Prophecy Formula Correction K-R #20	270	Cammann, et al. 1973	218
	A		2. I wish I could be as happy as others.					172
	NA or D		3. I take a positive attitude toward myself.					156
	A		4. I think I am no good at all.					<u>174</u>
3. HIERARCHY OF AUTHORITY	SA	The degree to which an individual willingly accepts a rigid separation of legitimate power, power which is vested in a higher organizational level.	1. Any decision I make should have by boss' approval (pre-test)	.5641	K-R #3	415	Macy Pre-test (See Exhibit C for item analysis)	219
	A		2. I prefer to decide how my work should be done rather than having someone tell me how to do it.					175
	NA or D		3. People should be allowed to do their job with minimal supervision.					157
	D		4. I prefer to make my own decisions without checking with anyone else.					164
	SD		5. I think even small matters should be referred to someone higher up for a final answer.					<u>180</u>
4. DIVISION OF LABOR	SA	The degree to which an individual willingly accepts task specialization and departmentalization.	1. I like doing a different job every few days.	.6583	K-R #3 (pre-test)	408	Macy Pre-test (See Exhibit C for item analysis)	222
	A		2. I find a repetitious job very monotonous.					212
	NA or D		3. I like a great deal of variety in my work.					178
	D		4. I don't like to do the same job in the same way every day.					<u>214</u>
<hr/>								
Items Dropped								
3. HIERARCHY OF AUTHORITY			6. There should be controls so that no one can get work supplies without special permission.					888
			7. An employee should be free to take an action even though his supervisor has not approved the decision.					hhh

EXHIBIT B (continued)

Variable	Scale	Definition	Items	Reliability	Method	N	Reference	Variable No.
5. RULES FOR INCUMBENTS	SA	The degree to which an individual willingly accepts a rigid set of rules and penalties regarding his work conduct.	1. Written orders from higher ups should be followed unquestioningly.	.5593 (pre-test)	K-R #3	408	Macy Pre-test (See Exhibit C for item analysis)	176
	A		2. Going through proper channels helps to make sure a job is done right.					177
	NA or D		3. Rules should be written to prevent employees from leaving their work areas without permission.					220
	D		4. When I do my work I prefer to do it according to the company rules.					166
	SD		5. Supervisors should constantly check for rule violations.					226
6. NEED FOR ACHIEVEMENT	SA	The degree to which an individual has goals, strives to accomplish tasks as quickly as possible, attempts to exert one's best efforts.	1. I know exactly what I want out of life.	.5947 (pre-test)	K-R #3	413	Macy Pre-test (See Exhibit C for item analysis)	170
	A		2. Every day I try to accomplish something worthwhile					169
	NA or D		3. I almost always feel that I must do the best at what I am doing.					162
	D		4. In general, I try to make every minute count.					158
	SD		5. I always do my best whether I am alone or with someone.					171
7. NEED FOR AFFILIATION	SA	The degree to which individuals desire to be with other people even if they are strangers; the desire to share common opinions with others.	1. Often I attend social gatherings just to be with others.	.4923 (pre-test)	K-R #3	417	Macy Pre-test (See Exhibit C for item analysis)	159
	A		2. It doesn't usually bother me to meet strangers.					165
	NA or D		3. I consider myself a good mixer.					163
	D		4. It never bothers me to go into a room by myself when other people have already gathered and are talking.					160
	SD							
Items Dropped (from page No. 9)			5. I would rather do one job and do it well.					111
4. DIVISION OF LABOR			6. Things work out better if everyone has a specific job to do.					111
			7. I think a person should learn to do more than one job.					kkk

Note: K-R #3 modified to handle multiple scales with Cronbach's coefficient alpha (O.S.U. data center - C 6.03.012)

EXHIBIT B (continued)
DEPENDENT VARIABLE: SATISFACTION (Part IV)

Variable	Scale	Definition	Items	Reliability	Method	N	Reference	Variable No.
1. SATISFAC- TION WITH COMPANY, MANAGEMENT, AND RECOG- NITION	Very Good	The degree to which employees are satisfied with the company, management, and recognition (i.e., similar to overall satisfaction.	1. Management's interest in welfare of employees.	.88	K-R #8	607	Stogdill,1965	230
	Good		2. This company as a place to work					231
	Fair		3. Appreciation shown here for my work					232
	Poor		4. Fair treatment of employees by management					233
	Very Poor		5. This Company's reputation in the community					234
			6. Feeling that my job is regarded as important.					235
			7. Management's planning for the future					236
			8. Communications from Company to its employees.					237
			9. Credit given by my supervisor for doing a good job.					238
			10. Management understanding of workers' problems					239
			11. My pride in working for this Company.					240
			12. Credit given by Company for good work.					241
2. SATISFAC- TION WITH PAY	MD	The degree to which employees are satisfied with the money, fringe benefits, and other commodities that have financial value which organizations give in return for their services.	1. The amount of money I am paid.	.73	K-R #8	607	Stogdill,1965	243
	B		2. Pay here compared with my friends' jobs.					244
	S		3. Pay compared to what my work is worth.					249
	MP		4. The pay for overtime.					246
<u>Items Dropped</u> (from page 10)								
5. RULES FOR INCUMBENTS			6. I don't mind going through some red tape to get a job done.					111
			7. They should be able to design organizations so you don't have so many rules.					112

EXHIBIT B (continued)

Variable	Scale	Definition	Items	Reliability	Method	N	Reference	Variable No.
3. SATISFAC- TION WITH JOB B CONTENT	MB*	The degree to which employ- ees are satisfied with the experienced-objective char- acteristics of his job (i.e. task structure; autonomy, variety, task feedback, task identity, and upward influence)	1. Satisfaction with my present job.	.83	K-R #8	607	Stogdill, 1965	242
	S		2. My happiness in my work compared to most people.					248
	P		3. Liking for the work I am doing here.					245
	MP		4. Interesting work to do.					<u>247</u>
4. PROPENSITY TO LEAVE	SA	The degree to which employees are voluntarily willing to leave the organization (i.e., perceived voluntary turnover).	1. I would quit this job at once if I could get anything else to do.	.90	Spearman-Brown Prophecy For- mula Correction of K-R #20	193	Stinson & John- son, 1975	161
	A		2. I would take any other job in which I could earn as much as I am earning now.					173
	NA or D		3. I have often thought about taking a job with another company.					167
	D		4. I would not change my job for any other job.					179
*Note:	MB=	Much Better Than You Expect	5. I am not eager to change jobs, but I would if I could get a better job.					215
	B =							
	S =	Same as Expected						
	P =	Poorer than Expected						
	MP=	Much Poorer Than Expected						
<u>Items Dropped (from page 10)</u>								
6. NEED FOR ACHIEVEMENT			6. I try harder to be content with myself than to be successful.					nnn
			7. I very often find myself doing or saying something for the pleasure of it.					<u>ooo</u>
7. NEED FOR AFFILIATION			5. In many ways my ideas of right and wrong differ from those people with whom I associate.					ppp
			6. Most of the time I see things differently than others do.					qqq
			7. If at all possible, I avoid being alone.					rrr

EXHIBIT C: Scale Reliabilities of Complete Pretest and
Reduced Pretest Questionnaire Items

	Pre-Test Complete Scale					Pre-Test Questionnaire Reduced Scale				
	Variable	Inter-item	Variance	N	Reliability	Variable	Inter-item	Variance	N	Reliability
	No.	Correlation				No.	Correlation			
I. FACETS OF TASK STRUCTURE - (Independent Variable)										
a. AUTONOMY	145	.4941	1.6060	402	.6770	--	--	same	--	--
	139	.3847	1.5744			--	--	same	--	--
	138	.5242	1.4293			--	--	same	--	--
	144	.4034	1.2778			--	--	same	--	--
	137	.4758	1.2314			--	--	same	--	--
	141	.3970	1.2803							
b. SKILL VARIETY	aaa	-.5053	1.5139	409	.5519	aaa	dropped		410	.6478
	145	.3031	1.8044			145	.3849	1.8082		
	140	.4336	1.1284			140	.4612	1.1283		
	129	.2476	1.5615			129	.3943	1.5607		
	132	.4030	2.3648			132	.4109	2.3702		
	133	.3679	1.5132			133	.4946	1.5146		
	128	.4448	1.3317			128	.4886	1.3327		
c. TASK FEEDBACK (multiple measures of the same scale or subset)										
1. Sims & Szilagyi (1974)	--	--	--	--	--	--	--	--	732	.80
2. Hackman & Oldham (1974)	--	--	--	--	--	--	--	--	658	.71
3. Hackman & Lawler (1971)	--	--	--	--	--	--	--	--	270	.75
4. Turner & Lawrence (1965)	--	--	--	--	--	--	--	--	470	.97
d. TASK IDENTITY (multiple measures of same scale or subset)										
1. Sims & Szilagyi (1974)	--	--	--	--	--	--	--	--	732	.77
2. Hackman & Oldham (1974)	--	--	--	--	--	--	--	--	658	.59
3. Hackman & Lawler (1971)	--	--	--	--	--	--	--	--	270	.77
4. Turner & Lawrence (1965)	--	--	--	--	--	--	--	--	470	.95

EXHIBIT C (continued)

Pre-Test Complete Scale						Pre-Test Questionnaire Reduced Scale					
Variable	Inter-Item					Variable	Inter-Item				
No.	Correlation	Variance	N	Reliability		No.	Correlation	Variance	N	Reliability	
e. UPWARD INFLUENCE											
			262	.8862					270	.8691	
146	.5673	1.3030				146	.5979	1.3013			
151	.5668	1.3767				151	.5851	1.4026			
153	.5239	1.4095				153	.5671	1.4277			
147	.5286	1.2897				147	.4819	1.3091			
bbb	.5306	0.5676				bbb	-- dropped	--			
ccc	.3311	0.6482				ccc	-- dropped	--			
ddd	.5112	0.8985				ddd	-- dropped	--			
eee	.5597	0.6117				eee	-- dropped	--			
154	.6826	1.3296				154	.6876	1.3097			
155	.6854	1.6484				155	.6972	1.6564			
fff	.3804	2.0590				fff	-- dropped	--			
152	.6336	1.6175				152	.5526	1.6368			
148	.5770	1.7385				148	.6232	1.7389			
150	.7392	0.9845				150	.7059	1.0139			
149	.6459	0.8683				149	.5849	0.8574			
II. INDIVIDUAL DIFFERENCES -											
(Moderators)											
a. INTERNAL-EXTERNAL LIFE ORIENTATION											
			403	.5789		--	--	-- same	--	--	--
216	.1716	0.9675									
211	.3014	1.2846				--	--	-- same	--	--	--
223	.0760	0.9278									
227	.3845	0.9431									
229	.1801	1.0984				--	--	-- same	--	--	--
221	.2736	1.2575									
168	.2462	0.8440				--	--	-- same	--	--	--
228	.1937	1.1899									
217	.2122	1.1505									
213	.3672	1.0131				--	--	-- same	--	--	--
224	.1984	0.8045									
225	.4193	1.0442									
b. SELF-ESTEEM (multiple measure of same scale)											
1. Cammann et al. (1973)	--	--	--	--	--	--	--	--	270	.77	
2. Kohn (1969)	--	--	--	--	--	--	--	--	3,101	.88	

EXHIBIT C (continued)

	Pre-Test Complete Scale					Pre-Test Questionnaire Reduced Scale				
	Variable No.	Inter-Item Correlation	Variance	N	Reliability	Variable No.	Inter-Item Correlation	Variance	N	Reliability
c. WILLINGNESS TO ACCEPT BUREAU-CRATIC ORIENTATION										
1. HIERARCHY OF AUTHORITY	888	.1738	1.1399	410	.5730	888	--	dropped --	415	.5641
	219	.3793	0.9630			219	.3328	0.9584		
	164	.4107	0.9749			164	.4436	0.9661		
	175	.3451	0.7161			175	.3861	0.7107		
	157	.3174	0.5949			157	.3251	0.5931		
	hhh	.2488	0.9229			hhh	--	dropped --		
	180	.4063	0.9220			180	.3660	0.9178		
2. DIVISION OF LABOR				401	.6185				408	.6583
	iii	.1845	1.0999			iii	--	dropped --		
	222	.4747	1.0065			222	.4874	1.0161		
	jjj	.2163	0.7148			jjj	--	dropped --		
	212	.4682	0.9945			212	.5429	1.0063		
	178	.5560	0.6933			178	.5811	0.6923		
	214	.4229	0.9230			214	.4315	0.9396		
	kkk	.1425	0.3156			kkk	--	dropped --		
3. RULES FOR INCUMBENTS				407	.5196				408	.5593
	176	.3611	0.9866			176	.4077	0.9844		
	177	.2971	0.8293			177	.2578	0.8281		
	220	.3559	1.0555			220	.4019	1.0535		
	111	.1463	0.7452			111	--	dropped --		
	mmmm	.0436	0.8552			mmmm	--	dropped --		
	166	.3814	0.6775			166	.3807	0.6767		
	226	.3584	0.9917			226	.3813	0.9906		

EXHIBIT C (continued)

Pre-Test Complete Scale						Pre-Test Questionnaire Reduced Scale					
Variable	Inter-Item					Variable	Inter-Item				
No.	Correlation	Variance	N	Reliability		No.	Correlation	Variance	N	Reliability	
d. NEED FOR ACHIEVEMENT											
nnn	-.0243	1.1664	412	.4580		nnn	--	dropped --	413	.5947	
170	.2399	0.9347				170	.2900	0.9386			
169	.3142	0.4956				169	.3524	0.4975			
162	.3592	0.5495				162	.4090	0.5500			
158	.3903	0.7496				158	.5376	0.7534			
ooo	.1501	0.9484				ooo	--	dropped --			
171	.3438	0.6598				171	.4191	0.6613			
e. NEED FOR AFFILIATION											
159	.2689	1.1777	411	.4215		159	.2185	1.1676	417	.4923	
165	.3010	0.7770				165	.4161	0.7871			
ppp	.0526	0.9317				ppp	--	dropped --			
163	.3954	0.6626				163	.4537	0.8121			
qqq	.1071	0.8502				qqq	--	dropped --			
rrr	.1151	0.9020				rrr	--	dropped --			
160	.2721	0.9525				160	.3384	0.9474			
III. OUTCOME VARIABLE											
a. FACET SATISFACTIONS											
1. MANAGEMENT, COMPANY AND RECOGNITION (Overall Satisfaction)											
a) Stogdill (1965)	--	--	--	--	--	--	--	--	607	.88	
2. PAY SATISFACTION											
a) Stogdill (1965)	--	--	--	--	--	--	--	--	607	.73	
3. JOB CONTENT (Job Satisfaction)											
a) Stogdill (1965)	--	--	--	--	--	--	--	--	607	.83	
b. PROPENSITY TO LEAVE THE ORGANIZATION											
1. Stinson & Johnson (1975)	--	--	--	--	--	--	--	--	193	.90	

Note: Refer to Exhibit B for Variable No. and Item Correspondence

EXHIBIT D: FACTOR ANALYSIS RESULTS - PRE-TEST VERSUS STUDY SAMPLE

VARIABLE	PRE-TEST SAMPLE				STUDY SAMPLE		
	No. of Factors	Loadings		Communalities	No. of Factors	Loadings	Communalities
		Factor 1	Factor 2				
<u>I. TASK STRUCTURE</u>							
A) <u>Autonomy</u>	TWO				ONE		
Items:					Items:		
137		-.4418	.0690	.7265	17	.4395	.1932
138		-.5872	.2992	.4343	18	.4091	.1674
139		-.0902	.6723	.4602	19	.5291	.2800
141		-.4418	.2041	.2389	20	.4223	.1783
144		-.8495	.5137	.2948	21	.6157	.3791
145		-.3571	.4915	.3691	22	.5326	.2837
B) <u>Skill Variety</u>	TWO				ONE		
Items:					Items:		
128		.6571	.2312	.4852	23	.4397	.1933
129		-.0226	.5839	.3415	24	.4368	.1908
132		.2493	.4342	.2507	25	.6000	.3600
133		.2471	.6164	.4409	26	.6145	.3778
140		.9267	.0746	.8643	27	.5621	.3159
143		.3162	.3431	.2177	28	.5433	.2952

EXHIBIT D: FACTOR ANALYSIS RESULTS - PRE-TEST VERSUS STUDY SAMPLE (CONT'D)

VARIABLE	PRE-TEST SAMPLE				STUDY SAMPLE		
	No. of Factors	Loadings		Communalities	No. of Factors	Loadings	Communalities
		Factor 1	Factor 2				
C) <u>Task Feedback</u>	TWO	(See Exhibit B)			ONE		
					Items:		
					29	.3577	.1279
					30	.8529	.7275
					31	.7847	.6157
D) <u>Task Identity</u>		(See Exhibit B)			ONE		
					Items:		
					32	.5241	.2746
					33	.6193	.3835
					34	.7997	.6395
					35	.3336	.1111
E) <u>Upward Influence</u>	TWO				ONE		
Items:					Items:		
146		.2587	.7364	.6092	36	.6231	.3945
147		.2524	.5177	.3317	37	.5809	.3375
148		.6564	.2544	.4956	38	.4906	.2407
149		.5428	.3196	.3968	39	.7115	.5062
150		.6053	.4494	.3684	40	.7656	.5861
151		.2714	.6888	.5481	41	.7866	.6187
152		.6283	.1797	.4272	42	.6992	.4889
153		.4451	.4074	.3641	43	.7000	.4990
154		.6905	.3221	.5805	44	.7535	.5677
155		.7165	.3126	.6111	45	.7114	.5062

EXHIBIT D: FACTOR ANALYSIS RESULTS - PRE-TEST VERSUS STUDY SAMPLE (CONT'D)

VARIABLE	PRE-TEST SAMPLE						STUDY SAMPLE		
	No. of Factors	Loadings				Communalities	No. of Factors	Loadings	Communalities
		Factor 1	Factor 2	Factor 3	Factor 4				
II. INDIVIDUAL DIFFERENCES									
A) I-E	FOUR						ONE		
Items:							Items:		
168		.4228	.0229	.0553	.0203	.1828	46	<u>.1727</u>	.2982-1
211		.0586	.0742	.5268	.1287	.3030	47	.4019	.1615
213		.6787	.2482	.1827	-.1835	.5892	48	.3673	.1349
216		-.0180	.1817	.1256	.2465	.1099	49	.3236	.1047
217		.5104	-.2313	-.0272	.4727	.5384	50	<u>.2526</u>	.6380-1
221		.4319	-.0363	.1524	.0985	.2208	51	<u>.2466</u>	.6081-1
223		.2727	-.0897	-.0049	-.0104	.0825	52	<u>.1400</u>	.1962-1
224		.0364	.5699	.0660	.0796	.3368	53	.3421	.1171
225		.1261	.3338	.3829	.2465	.3346	54	.5918	.3502
227		.1767	.1181	.6164	.0690	.4298	55	.5653	.3197
228		.0516	.5500	-.1276	.1016	.3319	56	.4374	.1913
229		-.0130	.1333	.1249	.3144	.1324	57	<u>.2619</u>	.6858-1
B) Self-Esteem							ONE		
							Items:		
							156	.5692	.3240
							172	<u>.1969</u>	.3877-1
							174	.3897	.1519
							218	.4037	.1629
			(See Exhibit B)						

Note: Boxes indicate loadings with $\leq .30$ are uninterpretable, unstable, and non-replicable (Nunnally, 1967, p. 303).

EXHIBIT D: FACTOR ANALYSIS RESULTS - PRE-TEST VERSUS STUDY SAMPLE (CONT'D)

VARIABLE	PRE-TEST SAMPLE				STUDY SAMPLE		
	No. of Factors	Loadings		Communalities	No. of Factors	Loadings	Communalities
		Factor 1	Factor 2				
C) <u>Hierarchy of Authority</u>	ONE				ONE		
Items:					Items:		
157		-.4303	<div>↑ NONE ↓</div>	.1852	62	.2558	.6545-1
164		-.6315		.3988	63	.5048	.2549
175		-.5398		.2914	64	.5876	.3452
180		-.4575		.2093	65	.6027	.3633
219		-.4100		.1689	66	.5495	.3020
D) <u>Division of Labor</u>	ONE				ONE		
Items:					Items:		
178		-.7349	<div>↑ NONE ↓</div>	.5401	67	.5152	.2654
212		-.6719		.4514	68	.5784	.3345
214		-.6047		.3656	69	.5721	.3272
222		-.5114		.2615	70	.5144	.2646

Note: Boxes indicate loadings with $\leq .30$ are uninterpretable, unstable, and non-replicable (Nunnally, 1967, p. 303).

EXHIBIT D: FACTOR ANALYSIS RESULTS - PRE-TEST VERSUS STUDY SAMPLE (CONT'D)

VARIABLE	PRE-TEST SAMPLE				STUDY SAMPLE		
	No. of Factors	Loadings		Communalities	No. of Factors	Loadings	Communalities
		Factor 1	Factor 2				
<u>E) Rules for Incumbents</u>	TWO				ONE		
Items:					Items:		
166		.3630	.2999	.2217	71	.4769	.2274
176		.4695	.2031	.2617	72	.5499	.3023
177		.0883	.8871	.7948	73	.4976	.2476
220		.5725	.0934	.3364	74	.4594	.2111
226		.6406	.0135	.4105	75	.4958	.2458
<u>F) Need for Achievement</u>	ONE				ONE		
Items:					Items:		
158		-.5138	↑ NONE ↓	.5233	76	.5317	.2827
162		-.5138		.2640	77	.5047	.2547
169		-.4500		.2025	78	.6003	.3604
170		-.3596		.1293	79	.3996	.1596
171		-.5713		.3263	80	.6746	.4551

EXHIBIT D: FACTOR ANALYSIS RESULTS - PRE-TEST VERSUS STUDY SAMPLE (CONT'D)

VARIABLE	PRE-TEST SAMPLE				STUDY SAMPLE		
	No. of Factors	Loadings		Communalities	No. of Factors	Loadings	Communalities
		Factor 1	Factor 2				
<u>G) Need for Affiliation</u>	ONE				ONE		
Items:					Items:		
159		-.2918	<div>↑ NONE ↓</div>	.0851	81	.1723	.2966-1
160		-.5027		.2527	82	.4741	.2248
163		-.6519		.4249	83	.6160	.3795
165		-.6152		.3784	84	.7379	.5445
<u>III. OUTCOMES</u>							
<u>A) Overall Satisfaction</u>					ONE		
		(See Exhibit B)			Items:		
					85	.7753	.6011
					86	.7324	.5365
					87	.7810	.6100
					88	.7902	.6244
					89	.6281	.3945
					90	.6215	.3862
					91	.6096	.3716
					92	.7006	.4909
					93	.6548	.4287
					94	.7858	.6175
					95	.6816	.4646
					96	.7651	.5854

Note: Boxes indicate loadings with $\leq .30$ are uninterpretable, unstable, and non-replicable (Nunnally, 1967, p. 303).

EXHIBIT D: FACTOR ANALYSIS RESULTS - PRE-TEST VERSUS STUDY SAMPLE (CONT'D)

VARIABLE	PRE-TEST SAMPLE						STUDY SAMPLE		
	No. of Factors	Loadings		Communalities	No. of Factors	Loadings	Communalities		
		Factor 1	Factor 2						
B) <u>Pay Satisfaction</u>		(See Exhibit B)			ONE Items: 97 98 99 100	.8390 .7859 .4727 .7675	.7039 .6176 .2234 .5890		
C) <u>Job Satisfaction</u>		(See Exhibit B)			ONE Items: 101 102 103 104	.7088 .7939 .7579 .7401	.5024 .6303 .5745 .5477		
D) <u>Propensity to Leave</u>		(See Exhibit B)			ONE Items: 105 106 107 108 109	.6313 .6794 .5645 .5685 .5158	.3986 .4615 .3187 .3233 .2661		

EXHIBIT E: INTER-ITEM CORRELATION MATRIX OF PRETEST, INDUSTRIAL AND SERVICE SAMPLE SCALES

PRE-TEST

XYZ VALVES

BETH

TASK STRUCTURE

Autonomy

	137	138	139	141	144	145
137	1.0					
138	.4989	1.0				
139	.1422	.2173	1.0			
141	.4271	.3058	.1742	1.0		
144	.1571	.2239	.3645	.3039	1.0	
145	.3380	.4514	.3797	.2846	.2849	1.0

	137	138	139	141	144	145
137	1.0					
138	-.3198	1.0				
139	-.2357	.2035	1.0			
141	.3502	-.2365	-.1526	1.0		
144	-.2012	.2155	.4544	-.3062	1.0	
145	-.2750	.3051	.2969	-.2437	.3441	1.0

	37	38	39	41	44	45
37	1.0					
38	-.2218	1.0				
39	-.0716	.0790	1.0			
41	.2731	-.0300	-.0838	1.0		
44	-.0904	.0417	.4822	-.2381	1.0	
45	-.1289	.2471	.2412	-.1231	.3141	1.0

Skill Variety

	128	129	132	133	140	143
128	1.0					
129	.1230	1.0				
132	.3104	.3042	1.0			
133	.2843	.3427	.2839	1.0		
140	.6283	.0268	.2592	.2700	1.0	
143	.2596	.1394	.1830	.3816	.3242	1.0

	128	129	132	133	140	143
128	1.0					
129	-.1000	1.0				
132	.2748	-.3296	1.0			
133	-.2392	.3123	-.4407	1.0		
140	.3097	-.1800	.3836	-.3130	1.0	
143	-.2388	.2949	-.3476	.4142	-.3668	1.0

	28	29	32	33	40	43
28	1.0					
29	.0141	1.0				
32	.2747	-.0802	1.0			
33	-.0968	.2094	-.1858	1.0		
40	.4731	-.0312	.2930	-.0818	1.0	
43	-.2038	.0557	-.2384	.2515	-.2550	1.0

Task Feedback

(See Exhibit B)

	131	134	135
131	1.0		
134	.2914	1.0	
135	.2488	.6492	1.0

	31	34	35
31	1.0		
34	.3301	1.0	
35	.3270	.7131	1.0

Task Identity

(See Exhibit B)

	127	130	136	142
127	1.0			
130	.2926	1.0		
136	.3935	.4722	1.0	
142	.0826	.2416	.2862	1.0

	27	30	36	42
27	1.0			
30	.3192	1.0		
36	.4988	.4133	1.0	
42	.0491	.2311	.2244	1.0

EXHIBIT E: INTER-ITEM CORRELATION MATRIX OF PRETEST, INDUSTRIAL AND SERVICE SAMPLE SCALES (CONT'D)

PRE-TEST

XYZ VALVES

Upward Influence

	146	147	148	149	150	151	152	153	154	155
146	1.0									
147	.4515	1.0								
148	.3434	.2675	1.0							
149	.3567	.3770	.3639	1.0						
150	.2920	.3978	.5132	.5440	1.0					
151	.5606	.4416	.3711	.3303	.4577	1.0				
152	.2920	.3080	.4577	.4740	.4804	.2613	1.0			
153	.4477	.2461	.4724	.3438	.4207	.4302	.2972	1.0		
154	.4016	.3240	.5325	.4789	.5280	.4459	.4721	.4357	1.0	
155	.4328	.3094	.5684	.4401	.5519	.4113	.4805	.4798	.6425	1.0

	146	147	148	149	150	151	152	153	154	155
146	1.0									
147	.4275	1.0								
148	.4304	.4716	1.0							
149	.4787	.4071	.2686	1.0						
150	.5025	.4654	.3003	.6855	1.0					
151	.5395	.4448	.3317	.6560	.7364	1.0				
152	.4546	.4096	.2621	.6219	.6380	.7302	1.0			
153	.4406	.3727	.4346	.3874	.4441	.4787	.4336	1.0		
154	.4624	.4487	.5337	.4470	.4596	.4848	.4648	.6629	1.0	
155	.4816	.3935	.4395	.4646	.4772	.4887	.4591	.5465	.6411	1.0

INDIVIDUAL DIFFERENCES

PRE-TEST

Internal-External

	168	211	213	216	217	221	223	224	225	227	228	229
168	1.0											
211	.0333	1.0										
213	.3020	.1243	1.0									
216	.0500	.1657	.0137	1.0								
217	.1926	.0376	.0248	.0730	1.0							
221	.2010	.1560	.2952	.0075	.2847	1.0						
223	.1621	-.0329	.1417	-.0907	.1533	.0811	1.0					
224	.0086	.0855	.1102	.1533	.1339	.0055	-.0512	1.0				
225	.0664	.2372	.1877	.1748	.0839	.1170	.2237	.2103	1.0			
227	.0656	.3503	.2582	.0700	.0936	.1495	.0502	.1287	.3370	1.0		
228	-.0154	.1073	.1140	.1130	-.0912	-.0229	-.0939	.3295	.2751	.1463	1.0	
229	.0234	.1109	-.0227	.0885	.1130	.0228	-.0047	.0050	.1829	.1200	.1102	1.0

EXHIBIT E: INTER-ITEM CORRELATION MATRIX OF PRETEST, INDUSTRIAL AND SERVICE SAMPLE SCALES (CONT'D)

BETH

Upward Influence

	46	47	48	49	50	51	52	53	54	55
46	1.0									
47	.4004	1.0								
48	.3225	.3201	1.0							
49	.4152	.4145	.2145	1.0						
50	.4470	.4110	.2475	.6679	1.0					
51	.4131	.3589	.2757	.5377	.6465	1.0				
52	.3242	.4023	.1712	.5995	.5210	.5266	1.0			
53	.4444	.3844	.3920	.4376	.5085	.5973	.4193	1.0		
54	.4255	.4244	.4186	.4615	.5130	.6178	.4636	.7027	1.0	
55	.4180	.4081	.3906	.4371	.4701	.5265	.3971	.6225	.7020	1.0

INDIVIDUAL DIFFERENCES

Internal-External

	68	81	83	86	87	91	93	94	95	97	98	99
68	1.0											
81	-.0622	1.0										
83	.0306	-.1729	1.0									
86	-.0082	.1061	-.0807	1.0								
87	.1525	-.0085	.1801	.0126	1.0							
91	-.0188	-.0669	.1300	-.0388	.2232	1.0						
93	.1700	-.1073	.1478	-.0210	.1242	.0285	1.0					
94	-.0840	.0807	.0135	.2134	.0605	.0334	-.0132	1.0				
95	.0045	.2318	-.2239	.1091	-.0430	-.1699	-.0210	.2410	1.0			
97	-.1231	.3213	-.2678	.0259	-.0950	-.0745	-.1353	.0743	.2519	1.0		
98	.0694	.1311	-.0690	.1925	-.0302	-.0345	-.0111	.3478	..2351	.2136	1.0	
99	-.0186	.0399	-.0542	.2181	-.1093	-.1428	.0677	.1502	.2306	.0447	.1939	1.0

EXHIBIT E: INTER-ITEM CORRELATION MATRIX OF PRETEST, INDUSTRIAL AND SERVICE SAMPLE SCALES (CONT'D)

XYZ VALVES

INDIVIDUAL DIFFERENCES

Internal-External

	168	211	213	216	217	221	223	224	225	227	228	229
168	1.0											
211	-.2586	1.0										
213	.1204	-.1651	1.0									
216	-.0471	.1031	-.0482	1.0								
217	.1748	-.0765	.2763	-.0218	1.0							
221	.1066	-.0996	.2026	-.0045	.1365	1.0						
223	.1257	-.0909	.1439	.0130	.1811	.1286	1.0					
224	.0477	.0146	-.0496	.3037	-.0028	.0113	.0972	1.0				
225	-.0341	.1845	-.2018	.2121	-.1755	-.1901	-.0750	.2977	1.0			
227	-.0812	.3060	-.3040	.1734	-.1432	-.0980	-.1176	.1701	.3883	1.0		
228	-.0228	.1603	-.0844	.1734	-.0086	-.0181	.0262	.3624	.2675	.2551	1.0	
229	-.0442	.0406	.0478	.0875	-.0821	-.3039	.0055	.1360	.1531	.0669	.2656	1.0

EXHIBIT E: INTER-ITEM CORRELATION MATRIX OF PRETEST, INDUSTRIAL AND SERVICE SAMPLE SCALES (CONT'D)

PRE-TEST

XYZ VALVES

BETH

INDIVIDUAL DIFFERENCES

Self-Esteem

(See Exhibit B)

	156	172	174	218
156	1.0			
172	-.0772	1.0		
174	-.2015	.0770	1.0	
218	.2205	-.1093	-.1369	1.0

	56	72	74	88
56	1.0			
72	-.0556	1.0		
74	-.2539	.1232	1.0	
88	.2607	-.0890	-.1115	1.0

ACCEPTANCE OF BUREAUCRATIC ORIENTATION

Hefrarchy of Authority

	157	164	175	180	219
157	1.0				
164	.2550	1.0			
175	.2868	.3881	1.0		
180	.1392	.2880	.1961	1.0	
219	.1948	.2171	.1448	.3160	1.0

	157	164	175	180	219
157	1.0				
164	.1451	1.0			
175	.2013	.3601	1.0		
180	-.1750	-.2414	-.2581	1.0	
219	-.0920	-.1741	-.2496	.3700	1.0

	57	64	75	80	89
57	1.0				
64	.1142	1.0			
75	.1731	.3355	1.0		
80	.0538	-.1742	-.3261	1.0	
89	.0516	-.2158	-.2160	.4930	1.0

Division of Labor

	178	212	214	222
178	1.0			
212	.4831	1.0		
214	.4795	.3811	1.0	
222	.3495	.3883	.2913	1.0

	178	212	214	222
178	1.0			
212	.3316	1.0		
214	.2536	.3456	1.0	
222	.2871	.2115	.2939	1.0

	78	82	84	92
78	1.0			
82	.2396	1.0		
84	.2800	.3409	1.0	
92	.2969	.2558	.2309	1.0

Rules for Incumbents

	166	176	177	220	226
166	1.0				
176	.2191	1.0			
177	.3022	.2238	1.0		
220	.2190	.3075	.1346	1.0	
226	.2599	.2924	.0637	.3628	1.0

	166	176	177	220	226
166	1.0				
176	.2130	1.0			
177	.2890	.2598	1.0		
220	.0943	.1944	.0932	1.0	
226	.1619	.2077	.1450	.3387	1.0

	66	76	77	90	96
66	1.0				
76	.2694	1.0			
77	.3697	.3869	1.0		
90	.1678	.2101	.2528	1.0	
96	.1474	.2971	.2322	.3768	1.0

Need for Achievement

	158	162	169	170	171
158	1.0				
162	.3024	1.0			
169	.3527	.2461	1.0		
170	.3041	.1982	.1600	1.0	
171	.4274	.3608	.2103	.1388	1.0

	158	162	169	170	171
158	1.0				
162	.2713	1.0			
169	.3566	.2522	1.0		
170	.2105	.1428	.2507	1.0	
171	.2971	.3359	.3612	.3439	1.0

	58	62	69	70	71
58	1.0				
62	.4001	1.0			
69	.3553	.3153	1.0		
70	.1455	.1196	.3330	1.0	
71	.3963	.4391	.4020	.2934	1.0

EXHIBIT E: INTER-ITEM CORRELATION MATRIX OF PRETEST, INDUSTRIAL AND SERVICE SAMPLE SCALES (CONT'D)

PRE-TEST

XYZ VALVES

BETH

ACCEPTANCE OF BUREAUCRATIC ORIENTATION (cont'd)

Need for Affiliation

	159	160	163	165
159	1.0			
160	.1003	1.0		
163	.2352	.3227	1.0	
165	.1695	.3361	.3844	1.0

	159	160	163	165
159	1.0			
160	.1485	1.0		
163	.1784	.2380	1.0	
165	.1222	.3492	.4108	1.0

	59	60	63	65
59	1.0			
60	.0500	1.0		
63	.1147	.2946	1.0	
65	.0314	.3760	.5220	1.0

OUTCOMES

Overall Satisfaction - XYZ Valves

	230	231	232	233	234	235	236	237	238	239	240	241
230	1.0											
231	.5825	1.0										
232	.5724	.4765	1.0									
233	.6479	.5798	.6094	1.0								
234	.5211	.5871	.4529	.5585	1.0							
235	.3996	.4143	.5374	.4462	.4086	1.0						
236	.4461	.4439	.3640	.4344	.4522	.3987	1.0					
237	.5131	.4707	.4764	.5161	.4803	.3969	.4934	1.0				
238	.4870	.3665	.6708	.4519	.3631	.4504	.3158	.4155	1.0			
239	.5972	.5592	.5159	.6059	.4855	.4411	.4358	.5686	.4931	1.0		
240	.5049	.6073	.4634	.5283	.3382	.5057	.4058	.3868	.3836	.5246	1.0	
241	.5547	.4570	.6829	.5837	.4448	.4351	.3643	.5101	.6542	.5696	.4851	1.0

Overall Satisfaction - Beth

	100	101	102	103	104	105	106	107	108	109	110	111
100	1.0											
101	.5981	1.0										
102	.6223	.5724	1.0									
103	.6732	.5966	.6450	1.0								
104	.3867	.5024	.3463	.3981	1.0							
105	.4192	.4694	.5702	.4593	.3538	1.0						
106	.5306	.5008	.4874	.5814	.3949	.4497	1.0					
107	.5316	.4421	.4934	.5179	.3476	.4467	.5776	1.0				
108	.4702	.3745	.6626	.5247	.2120	.3718	.4089	.4249	1.0			
109	.6709	.5570	.6477	.7214	.3733	.4613	.6015	.6040	.5849	1.0		
110	.4309	.6234	.4549	.4365	.4386	.5257	.4481	.4237	.3345	.4570	1.0	
111	.5650	.4866	.6412	.5439	.3190	.4842	.5367	.5678	.5851	.6291	.4619	1.0

EXHIBIT E: INTER-ITEM CORRELATION MATRIX OF PRETEST, INDUSTRIAL AND SERVICE SAMPLE SCALES (CONT'D)

PRE-TEST

XYZ VALVES

BETH

OUTCOMES (cont'd)

Pay Satisfaction

(See Exhibit B)

	243	244	246	249
243	1.0			
244	.6443	1.0		
246	.4370	.4160	1.0	
249	.6300	.5743	.4016	1.0

	113	114	116	119
113	1.0			
114	.6694	1.0		
116	.3659	.3901	1.0	
119	.6793	.5971	.3511	1.0

Job Satisfaction

(See Exhibit B)

	242	245	247	248
242	1.0			
245	.5756	1.0		
247	.5051	.5911	1.0	
248	.5141	.5198	.5408	1.0

	112	115	117	118
112	1.0			
115	.5811	1.0		
117	.5098	.6152	1.0	
118	.5668	.5963	.6056	1.0

Propensity to Leave

(See Exhibit B)

	161	167	173	179	215
161	1.0				
167	.4445	1.0			
173	.4339	.3722	1.0		
179	-.2535	-.3817	-.1736	1.0	
215	.1955	.2581	.1285	-.3430	1.0

	61	67	73	79	85
61	1.0				
67	.4214	1.0			
73	.5217	.3951	1.0		
79	-.3636	-.3026	-.3334	1.0	
85	.4005	.3072	.3074	-.4011	1.0

NOTE: 1) Pretest (reflected)
2) XYZ (unreflected)
3) Beth (unreflected)
4) Sample Size (N)
a) Pretest = 424 (Ohio Service & Union sample; Jan-April, 1974)
b) XYZ Valves = 361 (Texas Manufacturing plant; Sept., 1974)
c) Beth = 543 (Ohio non-profit hospital; Oct., 1974)

EXHIBIT F: INTER-ITEM CORRELATION OF STUDY SCALES

(N = 1409)

TASK STRUCTURE

Autonomy

	17	18	19	20	21	22
17	1.0					
18	.2818	1.0				
19	.1766	.1595	1.0			
20	.3226	.1604	.1306	1.0		
21	.1609	.1509	.4655	.2834	1.0	
22	.2145	.2821	.2752	.1950	.3290	1.0

Skill Variety

	23	24	25	26	27	28
23	1.0					
24	.0182	1.0				
25	.2372	.2733	1.0			
26	.1326	.4877	.3760	1.0		
27	.4999	.1152	.3317	.2118	1.0	
28	.2190	.2199	.3015	.3490	.3244	1.0

Task Feedback

	29	30	31
29	1.0		
30	.3038	1.0	
31	.2748	.6671	1.0

Task Identity

	32	33	34	35
32	1.0			
33	.3193	1.0		
34	.4376	.4781	1.0	
35	.0894	.2552	.2842	1.0

Upward Influence

	36	37	38	39	40	41	42	43	44	45
36	1.0									
37	.4181	1.0								
38	.3772	.4167	1.0							
39	.4563	.4094	.2456	1.0						
40	.4819	.4456	.2810	.6756	1.0					
41	.4851	.4077	.3122	.5993	.6975	1.0				
42	.4080	.4069	.2261	.6149	.5937	.6410	1.0			
43	.4421	.3767	.4146	.4065	.4662	.5151	.4299	1.0		
44	.4486	.4395	.4875	.4523	.4791	.5326	.4649	.6780	1.0	
45	.4558	.3973	.4230	.4488	.4745	.5068	.4318	.5683	.6609	1.0

EXHIBIT F: INTER-ITEM CORRELATION OF STUDY SCALES (CONT'D)
(N = 1409)

INDIVIDUAL DIFFERENCES

Internal-External

	46	47	48	49	50	51	52	53	54	55	56	57
46	1.0											
47	.1845	1.0										
48	.0890	.1675	1.0									
49	.0301	.1057	.0593	1.0								
50	.1643	.0531	.2425	.0114	1.0							
51	.0569	.0902	.1755	.0387	.1694	1.0						
52	.1481	.0890	.1440	-.0084	.1521	.0778	1.0					
53	.0047	.0359	.0274	.2653	-.0229	-.0260	-.0403	1.0				
54	.0135	.2036	.2064	.1813	.1342	.1906	.0356	.2639	1.0			
55	.0925	.3132	.2900	.1217	.1277	.0933	.1118	.1287	.3438	1.0		
56	-.0076	.1475	.0791	.1777	.0146	.0203	-.0047	.3595	.2482	.2360	1.0	
57	.0339	.0594	-.0114	.1358	.0923	.1186	-.0295	.1398	.1802	.0593	.2380	1.0

Self-Esteem

	58	59	60	61
58	1.0			
59	.0686	1.0		
60	.2335	.0967	1.0	
61	.2440	.1022	.1302	1.0

Acceptance of a Bureaucratic Orientation

Hierarchy of Authority

	62	63	64	65	66
62	1.0				
63	.1664	1.0			
64	.2152	.3747	1.0		
65	.1102	.2459	.3068	1.0	
66	.0768	.2358	.2689	.4441	1.0

Division of Labor

	67	68	69	70
67	1.0			
68	.3020	1.0		
69	.2729	.3634	1.0	
70	.2979	.2606	.2970	1.0

Rules For Incumbents

	71	72	73	74	75
71	1.0				
72	.2584	1.0			
73	.3258	.3164	1.0		
74	.1574	.2378	.1673	1.0	
75	.1814	.2691	.1880	.3785	1.0

EXHIBIT F: INTER-ITEM CORRELATION OF STUDY SCALES (CONT'D)
(N = 1409)

INDIVIDUAL DIFFERENCES (Cont'd)

Need for Achievement

	76	77	78	79	80
76	1.0				
77	.3161	1.0			
78	.3491	.2745	1.0		
79	.1724	.1302	.2822	1.0	
80	.3269	.3707	.3747	.3232	1.0

Need for Affiliation

	81	82	83	84
81	1.0			
82	.1068	1.0		
83	.1513	.2599	1.0	
84	.0767	.3604	.4557	1.0

OUTCOMES

Overall Satisfaction

	85	86	87	88	89	90	91	92	93	94	95	96
85	1.0											
86	.5936	1.0										
87	.5958	.5207	1.0									
88	.6598	.5887	.6253	1.0								
89	.4724	.5702	.4244	.4948	1.0							
90	.4130	.4437	.5427	.4552	.3976	1.0						
91	.4672	.4439	.3973	.4801	.3635	.4065	1.0					
92	.5255	.4715	.4900	.5201	.4509	.4228	.5067	1.0				
93	.4847	.3759	.6702	.4817	.3199	.4256	.3414	.4247	1.0			
94	.6281	.5617	.5690	.6509	.4421	.4533	.4896	.5848	.5298	1.0		
95	.4855	.6234	.4695	.5005	.5393	.5182	.3903	.4126	.3741	.5022	1.0	
96	.5648	.4829	.6725	.5719	.4319	.4622	.4087	.5407	.6308	.6071	.4939	1.0

EXHIBIT F: INTER-ITEM CORRELATION OF STUDY SCALES (CONT'D)
(N = 1409)

OUTCOMES (Cont'd)

Pay Satisfaction

	97	98	99	100
97	1.0			
98	.6625	1.0		
99	.3844	.3810	1.0	
100	.6563	.5918	.3613	1.0

Job Satisfaction

	101	102	103	104
101	1.0			
102	.5841	1.0		
103	.5148	.6115	1.0	
104	.5413	.5624	.5781	1.0

Propensity to Leave

	105	106	107	108	109
105	1.0				
106	.4178	1.0			
107	.4681	.3915	1.0		
108	.2952	.4105	.2608	1.0	
109	.2804	.3451	.2264	.4222	1.0

Exhibit G: Scale Means, Standard Deviation, Variances,
and Reliability Coefficients for Task Structure

TASK STRUCTURE					
Summary Scale Data	Autonomy	Skill Variety	Task Feedback	Task Identity	Upward Influence
Mean	22.37	18.14	10.97	15.72	22.28
Standard Deviation	3.97	4.46	2.48	2.97	9.07
Variance	15.72	19.86	6.14	7.65	82.30
K - R #3	.6147	.6667	.6261	.5597	.8862
Cronbach Alpha	.6552	.7006	.6921	.6214	.8945
N	1287	1281	1305	1305	1315

Exhibit H: Scale Means, Standard Deviation, Variances,
and Reliability Coefficients for Individual
Differences

INDIVIDUAL DIFFERENCES							
Summary Scale Data	I-E	Self- Esteem	Hierarchy of Authority	Division of Labor	Rules for Incumbents	Need for Achievement	Need for Affiliation
Mean	37.40	15.99	17.53	15.00	13.82	20.50	14.04
Standard Deviation	5.30	1.83	3.29	2.54	3.15	2.51	2.57
Variance	28.06	3.34	10.80	6.42	9.90	6.31	6.60
K - R #3	.5980	.3145	.5845	.5564	.5618	.6099	.4659
Cronbach Alpha	.6158	.3792	.6288	.6211	.6114	.6593	.5312
N	1318	1358	1356	1360	1341	1346	1346

Exhibit I: Scale Means, Standard Deviation, Variance,
and Reliability Coefficients for Outcomes

OUTCOMES				
Summary Scale Data	Overall Satisfaction	Pay Satisfaction	Job Satisfaction	Propensity To Leave
Mean	42.17	10.89	13.88	13.77
Standard Deviation	8.52	2.91	2.86	3.74
Variance	72.64	8.45	8.20	13.99
K - R #3	.9195	.7693	.7936	.6846
Cronbach Alpha	.9236	.8063	.8367	.7290
N	1296	1288	1355	1348

EXHIBIT J: STUDY SAMPLE - CONVERSION ITEM INDEX

September-October, 1974

	<u>Total Possible Sample Size</u>	<u>Study Sample N</u>
I. <u>Industrial Sample</u>	1003	861
A. Total Hourly	607	530
B. Total Salaried	396	331
1. Non-Exempt	164	145
2. Exempt-Supervisory	232	182
3. Missing Data	-	4
II. <u>Hospital Sample</u>	679	548
A. Total Hourly	605	474
B. Total Salaried	74	70
1. Non-Exempt	21	19
2. Exempt-Supervisory	53	51
3. Missing Data	--	4
III. <u>Total Sample</u>	1682	1409

EXHIBIT J: STUDY SAMPLE - CONVERSION ITEM INDEX (CONT'D)

DEMOGRAPHIC VARIABLES

Variable Name	Original Computer Variable		Conversion Computer Variable
	XYZ Valves	Beth	
<u>WAGE CLASSIFICATION</u>			
	109	21	1
1) <u>XYZ Valves</u> Hourly	1) <u>Beth</u> Full-time hourly; 2) Part time hourly		
2) Salaried - non-exempt			
3) Salaried - exempt	3) Salaried - non supervisory		
4) Salaried - supervisory	4) Salaried - supervisory		
<u>WORK TIME</u>			
	110	24	2
1) Less than 30 days			
2) 1-3 months			
3) 4-11 months			
4) 1-3 years			
5) 4-5 years			
6) 6-10 years			
7) 11 years or more			
<u>COMMUNITY SIZE - REARING</u>			
	111	18	3
1) On farm or ranch			
2) In the country, not a farm			
3) A suburban town near a city			
4) A small city (less than 100,000 people)			
5) A large city (more than 100,000 people)			
<u>AGE</u>			
	112	13	4
1) Under 20			
2) 21-25 years			
3) 26-30 years			
4) 31-35 years			
5) 36-40 years			
6) 41-45 years			
7) 46-55 years			
8) 56 years or older			
<u>PRESENT TENURE ON JOB</u>			
	113	25	5
1) Less than 30 days			
2) 1-3 months			
3) 4-11 months			
4) 1-3 years			
5) 4-5 years			
6) 6-10 years			
7) 11 years or more			

EXHIBIT J: STUDY SAMPLE - CONVERSION ITEM INDEX (CONT'D)

DEMOGRAPHIC VARIABLES (cont'd)

Variable Name	Original Computer Variable		Conversion Computer Variable
	XYZ Valves	Beth	
<u>MARITAL STATUS</u>			
	114	12	6
<u>XYZ Valves</u>			
1) Yes	1) Married		
2) No	2) Widowed		
	3) Separated		
	4) Divorced		
	5) Never Married		
<u>COMMUNITY SIZE - CURRENT</u>			
	115	19	7
1) On a farm or ranch			
2) In the country, not a farm			
3) A suburban town near a city			
4) A small city (less than 100,000 people)			
5) A large city (more than 100,000 people)			
<u>EDUCATION LEVEL</u>			
	116	15	8
1) Some elementary school (grades 1-7)			
2) Completed elementary school (8 grades)			
3) Some high school (9-11 years)			
4) Graduated from high school or G.E.D.			
5) Some college or technical training beyond high school (1-3 years)			
6) Graduated from college (B.A., B.S., or other bachelors degree)			
7) Some graduate school			
8) Graduate degree (Masters, Ph.D., M.D., etc.)			
<u>TOTAL INCOME</u>			
	117	20	9
1) Under \$4,000			
2) \$4,000-5,999			
3) \$6,000-7,999			
4) \$8,000-9,999			
5) \$10,000-12,999			
6) \$13,000-15,999			
7) \$16,000-19,999			
8) \$20,000 or more			
<u>RACE</u>			
	118	16	10
<u>XYZ Valves</u>			
1) Black	1) Black		
2) Oriental	2) Oriental		
3) American Indian	3) American Indian		
4) Spanish Surname	4) Spanish Surname		
5) None of the above	5) White		
	6) None of the above		

EXHIBIT J: STUDY SAMPLE - CONVERSION ITEM INDEX (CONT'D)

DEMOGRAPHIC VARIABLES (cont'd)

<u>Variable Name</u>	<u>Original Computer Variable</u>		<u>Conversion Computer Variable</u>
	<u>XYZ Valves</u>	<u>Beth</u>	
<u>WORK HOURS PER WEEK</u>	119	26	11
1) 30-34			
2) 35-39			
3) 40-44			
4) 45-49			
5) 50-54			
6) 55-59			
7) 60-64			
8) 65 and over			
<u>SEX</u>	120	11	12
1) Female			
2) Male			
<u>PRIMARY SOURCE OF INCOME</u>	121	17	13
1) Yes			
2) No			
<u>SHIFT</u>	122	23	14
1) First Shift			
2) Second Shift			
3) Third Shift			
<u>HOURLY CLASSIFICATION (skill level)</u>	123	22	15
<u>XYZ Valves</u>		<u>Beth</u>	
1) 1st Class-Maintenance	1) RN's		
2) 2nd Class-Tool Control	2) LPN's		
3) 3rd Class-Machine Operator	3) Aid's		
4) 4th Class-Tool Grinder	4) Orderly's		
	5) Technicians		
	6) Clerical and/or Secretarial		
5) None of the above	7) None of the above		
<u>SITE STRATA NUMBER</u>			16
1) Hospital			
2) Industrial			

EXHIBIT J: STUDY SAMPLE - CONVERSION ITEM INDEX (CONT'D)

INDEPENDENT VARIABLES - TASK STRUCTURE

Variable Name	Code Number	Original Computer Variable		Conversion Computer Variable	Reflections
		XYZ Valves	Beth		
<u>Autonomy</u>	B1	137	37	17	---
	B1	138	38	18	R
	B1	139	39	19	R
	B1	141	41	20	---
	B1	144	44	21	R
	B1	145	45	22	R
<u>Skill Variety</u>	B2	128	28	23	---
	B2	129	29	24	R
	B2	132	32	25	---
	B2	133	33	26	R
	B2	140	40	27	---
	B2	143	43	28	R
<u>Task Feedback</u>	B3	131	31	29	R
	B3	134	34	30	R
	B3	135	35	31	R
<u>Task Identity</u>	B4	127	27	32	R
	B4	130	30	33	R
	B4	136	36	34	R
	B4	142	42	35	R
<u>Upward Influence</u>	B5	146	46	36	---
	B5	147	47	37	---
	B5	148	48	38	---
	B5	149	49	39	---
	B5	150	50	40	---
	B5	151	51	41	---
	B5	152	52	42	---
	B5	153	53	43	---
	B5	154	54	44	---
	B5	155	55	45	---

MODERATORS - INDIVIDUAL DIFFERENCES

<u>Internal-External</u>	C1	168	68	46	---
	C1	211	81	47	R
	C1	213	83	48	---
	C1	216	86	49	R
	C1	217	87	50	---
	C1	221	91	51	---
	C1	223	93	52	---
	C1	224	94	53	R
	C1	225	95	54	R
	C1	227	97	55	R
	C1	228	98	56	R
	C1	229	99	57	R

EXHIBIT J: STUDY SAMPLE - CONVERSION ITEM INDEX (CONT'D)

MODERATORS - INDIVIDUAL DIFFERENCES (cont'd)

Variable Name	Code Number	Original Computer Variable		Conversion Computer Variable	Reflections
		XYZ Valves	Beth		
<u>Self-Esteem</u>	C2	156	56	58	R
	C2	172	72	59	---
	C2	174	74	60	---
	C2	218	88	61	R
<u>C3 = Acceptance of Bureaucratic Orientation</u>					
<u>Hierarchy of Authority</u>	C3a	157	57	62	R
	C3a	164	64	63	R
	C3a	175	75	64	R
	C3a	180	80	65	---
	C3a	219	89	66	---
<u>Division of Labor</u>	C3b	178	78	67	R
	C3b	212	82	68	R
	C3b	214	84	69	R
	C3b	222	92	70	R
<u>Rules for Incumbents</u>	C3c	166	66	71	---
	C3c	176	76	72	---
	C3c	177	77	73	---
	C3c	220	90	74	---
	C3c	226	96	75	---
<u>Need for Achievement</u>	C4	158	58	76	R
	C4	162	62	77	R
	C4	169	69	78	R
	C4	170	70	79	R
	C4	171	71	80	R
<u>Need for Affiliation</u>	C5	159	59	81	R
	C5	160	60	82	R
	C5	163	63	83	R
	C5	165	65	84	R

DEPENDENT VARIABLES - OUTCOMES

<u>Overall Satisfaction</u>	D1	230	100	85	R
	D1	231	101	86	R
	D1	232	102	87	R
	D1	233	103	88	R
	D1	234	104	89	R
	D1	235	105	90	R
	D1	236	106	91	R
	D1	237	107	92	R
	D1	238	108	93	R
	D1	239	109	94	R
	D1	240	110	95	R
	D1	241	111	96	R

EXHIBIT J: STUDY SAMPLE - CONVERSION ITEM INDEX (CONT'D)

DEPENDENT VARIABLES - OUTCOMES (cont'd)

<u>Variable Name</u>	<u>Code Number</u>	<u>Original Computer Variable</u>		<u>Conversion Computer Variable</u>	<u>Reflections</u>
		<u>XYZ Valves</u>	<u>Beth</u>		
<u>Pay Satisfaction</u>	D2	243	113	97	R
	D2	244	114	98	R
	D2	246	116	99	R
	D2	249	119	100	R
<u>Job Satisfaction</u>	D3	242	112	101	R
	D3	245	115	102	R
	D3	247	117	103	R
	D3	248	118	104	R
<u>Propensity to Leave</u>	D4	161	61	105	R
	D4	167	67	106	R
	D4	173	73	107	R
	D4	179	79	108	---
	D4	215	85	109	R

Exhibit K : Sample Characteristics -
Job Level or Wage Class

Classification	N	Percent
Hourly	1004	71.7
Salaried - Non exempt	145	10.3
Salaried - Exempt, Non supervisory	120	8.6
Salaried - Exempt, Supervisory	132	9.4
Missing	8	

Exhibit K : Sample Characteristics -
Seniority or Company Tenure
(continued)

Company Tenure	N	Percent
Less than 30 days	41	2.9
1 - 3 months	99	7.1
4 - 11 months	226	16.2
1 - 3 years	356	25.5
4 - 5 years	191	13.7
6 - 10 years	234	16.7
11 years or more	251	18.0
Missing	11	

Exhibit K : Sample Characteristics -
Socialization or Community
Size (Rearing) - (continued)

Socialization (Rearing)	N	Percent
On a farm or ranch	265	19.0
In the country, not on a farm	184	13.2
A suburban town near a city	129	9.3
A small city (less than 100,000 people)	397	28.5
A large city (more than 100,000 people)	418	30.0
Missing	16	

Exhibit K : Sample Characteristics -
Age - (continued)

Age	N	Percent
Under 20	126	9.0
21 - 25 years	357	25.4
26 - 30 years	273	19.5
31 - 35 years	164	11.7
36 - 40 years	123	8.8
41 - 45 years	107	7.6
46 - 55 years	172	12.3
56 years or older	81	5.8
Missing	6	

Exhibit K : Sample Characteristics -
Job Tenure - (continued)

Job Tenure	N	Percent
Less than 30 days	72	5.2
1 - 3 months	194	13.9
4 - 11 months	306	21.9
1 - 3 years	409	29.3
4 - 5 years	145	10.4
6 - 10 years	154	11.0
11 years or more	104	7.4
Missing	25	

Exhibit K: Sample Characteristics -
Marital Status - (continued)

Marital Status	N	Percent
Married	989	73.0
Widowed	201	14.8
Separated	7	.5
Divorced	45	3.3
Never Married	113	8.3
Missing	54	

Exhibit K : Sample Characteristics -
Socialization (Current)
(continued)

Socialization (Current)	N	Percent
On a farm or ranch	165	11.8
In the country, not on a farm	147	10.5
A suburban town near a city	189	13.5
A small city (under 100,000 people)	331	23.7
A large city (more than 100,000 people)	565	40.4
Missing	14	

Exhibit K : Sample Characteristics -
Education - (continued)

Education	N	Percent
Some elementary school (grades 1 - 7)	13	.9
Completed elementary school (8 grades)	28	2.0
Some high school (9 - 11 years)	159	11.5
Graduated from high school or G.E.D.	561	40.5
Some college or technical training beyond high school (1 - 3 years)	494	35.7
Graduated from college (B.A., B.S., or other bachelors degree)	74	5.3
Some graduate school	31	2.2
Graduate degree (Masters, Ph.D, M.D., etc.)	24	1.7
Missing	25	

Exhibit K : Sample Characteristics -
Income - (continued)

Income	N	Percent
Under \$4,000	232	16.5
\$4,000 - 5,999	285	20.2
\$6,000 - 7,999	200	14.2
\$8,000 - 9,999	205	14.5
\$10,000 - 12,999	305	21.6
\$13,000 - 15,999	89	6.3
\$16,000 - 19,999	27	1.9
\$20,000 or more	26	1.8
Missing	40	

Exhibit K : Sample Characteristics -
Race - (continued)

Race	N	Percent
Black	121	8.7
Oriental	14	1.0
American Indian	23	1.7
Spanish Surname	108	7.8
White	1,118	80.8
Missing	25	

Exhibit K : Sample Characteristics -
Work Hours Per Week
(continued)

Work Hours Per Week	N	Percent
30 - 34	67	4.9
35 - 39	8	.6
40 - 44	759	55.6
45 - 49	379	27.8
50 - 54	91	6.7
55 - 59	45	3.3
60 - 64	9	.7
65 and over	6	.4
Missing	45	

Exhibit K : Sample Characteristics -
Sex - (continued)

Sex	N	Percent
Female	587	42.0
Male	809	58.0
Missing	13	

Exhibit K : Sample Characteristics -
Primary Source of Income
(continued)

Primary Source of Income	N	Percent
Yes	891	64.2
No	497	35.8
Missing	21	

Exhibit K : Sample Characteristics -
Shift - (continued)

Shift	N	Percent
First	912	67.6
Second	283	21.0
Third	155	11.5
Missing	59	

Exhibit K : Sample Characteristics -
Site - (continued)

Site	N	Percent
Beth	548	38.9
XYZ Valves	861	61.1

Exhibit L: Multiple Classification Analysis (MCA)

The main advantage of MCA is when suspected predictors are combined into a single "pattern" variable (i.e., a specific facet of task structure combined with a specific individual personality variable). MCA uses this pattern variable as the control in predicting the same criterion measure as was predicted in the R^2 step. This particular MCA analysis mode generates an unadjusted Eta squared (Ni^2), which is an unbiased estimate of the fraction of criterion variance explained by the pattern variable. The difference between R^2 and Ni^2 indicates the fraction of explained variance which is lost to the additivity assumption.

In other terminology, the use of MCA allows the researcher to sort out the relative contributions of predictors. The main effects of task structure, personality, and the outcome variables plus their interactions can be studied independent of one another. For the purposes of making an MCA analysis mode pattern variable, interaction terms of each facet of task structure X each individual difference variable were formed. This was done by quinchotomizing each predictor variable (i.e., each facet of task structure and each personality variable) so that it was scored 1 to 5, and by adding the two predictors (e.g., autonomy X I-E) together to form a 25-point scale ranging from 1 (1 X 1) to 25 (5 X 5). Adding the two predictors together formed the pattern variable (the main effects plus the interaction effects) and produced the

Exhibit L: Multiple Classification
Analysis (MCA) - (cont'd)

Ni^2 . In addition, the program produces a $Beta^2$ which is the relative importance of each predictor independent of the others. In this instance, $Beta^2$ is not a proportion of variance and must be interpreted with caution. The $Beta^2$ is actually a partial beta coefficient for each predictor. "The rank order of these betas indicates the relative importance of the various predictors in their explanation of the dependent variable if all other predictors were 'held constant'" (Andrews, et al., 1973, p. 47). The square of the beta coefficient is the sum of the squares attributable to the predictor after holding all other predictors constant relative to the total sum of the squares.

Utilizing a combination or pattern variable in this so-called "super analysis" of variance can assist a MCA user in detecting predictor interactions. Andrews, et al. (1973) recommends the following five-step procedure to detect interactions or moderators:

1. Determine a set of suspected interacting predictors.
2. Form a "combination variable" using these predictors.
3. Run one MCA analysis using the suspect predictors to get adjusted R^2 .
4. Run one MCA analysis with the "combination variable" as the control in one-way analysis of variance to get adjusted eta squared, which will be \geq adjusted R.
5. Use the difference, adjusted eta squared--adjusted R (the fraction of variance explained which is lost due to the additivity assumption), as a guide to determine whether the use of a combination variable in place of the original predictors is justified (p. 21-22).

Exhibit L: Multiple Classification
Analysis (MCA) - (cont'd)

For a more detailed explanation of the interaction effects and the making of a pattern variable through MCA, see Andrews, et al. (1973) pages 17-22.

Although there are several alternative methods for calculating the various statistics utilized in MCA, they are derived from the following basic statistical model:

$$Y_{ij} \dots n = \bar{Y} + a_i + b_j + e_{ij} \dots n$$

where: $Y_{ij} \dots n$ = The score on dependent variable

\bar{Y} = Grand mean on dependent variable

a_i = The effect of the membership in the i^{th} category of predictor A

b_j = The effect of membership in the j^{th} category of predictor B

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.

$e_{ij} \dots n$ = Error term

MCA calculates an R^2 unadjusted which is the multiple correlation coefficient squared, before making allowance for the degrees of freedom. It is the actual proportion of variance explained in a given run of MCA. It is computed by means of the following formula:

$$R^2 = E/T$$

where: E = explained sum of squares

T = total sum of squares

Exhibit L: Multiple Classification Analysis (MCA) - (cont'd)

The MCA R^2 is identical to the R^2 which could have been obtained from a multiple regression utilizing the appropriate dummy variables.

In order to check for interaction, the MCA program produces an unadjusted eta squared which is often called the correlation ratio. It is the percent of variance in the dependent variable that can be explained by the combination of two predictors into a pattern variable. It is computed by the following formula:

$$N_i^2 = \frac{BSS}{TSS}$$

where: BSS = the between means sum of squares

TSS = the total sum of squares

The Beta squared statistic for each predictor is calculated by the following formula:

$$\beta_i^2 = D_i/T$$

where: D_i = sum of squares over an individuals score (k) on the dependent variable, of adjusted deviations for each predictor

T = total sum of squares

Once again, the Beta squared is the sum of squares attributable to the predictor, after "holding other predictors constant," relative to the total sum of squares. The formula for the calculation of Beta is:

Exhibit L: Multiple Classification
Analysis (MCA) - (cont'd)

tern variable) between unadjusted R^2 and Ni^2 . Darlington (1968) and Cohen (1968) suggest the difference between R^2 and Ni^2 or any interaction due to any increment to an $R^2_{y.A}$ because of the addition of B can be tested by the F ratio. Specifically, Cohen (1973, p. 435) provides the following formula:

$$F = \frac{R^2_{y.A,B} - R^2_{y.A} / b}{(1 - R^2_{y.A,B}) / (n - a - b - 1)}$$

where: $df = b$ and $(n - a - b - 1)$

$R^2_{y.A,B}$ = the incremented R^2 based on $a + b$ independent variables, that is, predicted from the combined sets of A and B variables

$R^2_{y.A}$ = the smaller R^2 based on only a independent variable, that is, predicted from only A set.

a and b are the number of original (a) and added (b) independent variables, hence the number of degrees of freedom each takes up

Cohen indicates his F ratio "is much more general in its applicability than the present narrow context, and its symbols have been accordingly given quite general interpretation." (1973, p. 435)

Following Cohen's suggestion, his F ratio was reduced to the following formula to be compatible with the MCA derived statistics:

Exhibit L: Multiple Classification
Analysis (MCA) - (cont'd)

$$\begin{aligned}
 F \text{ Ratio} &= \frac{(R^2_{y.A,B} - R^2_{y.A})/b}{(1 - R^2_{y.A,B})/(n - a - b - 1)} \\
 &= \frac{N_i^2 - R^2}{1 - N_i^2} \cdot \frac{(n - a - b_1 - 1)}{b_2}
 \end{aligned}$$

where: N_i^2 = unadjusted eta squared

R^2 = unadjusted multiple correlation coefficient squared

n = number of cases

a = original predictor variable degrees of freedom

b_1 = pattern variable degrees of freedom

b_2 = pattern variable degrees of freedom minus the original variable degrees of freedom

Exhibit M: Partial-Order r

Partial-Order r

When only one variable is held constant, a first-order partial correlation is the outcome. A first-order partial correlation "between two variables is one that nullifies the effects of a third variable (or a number of other variables) upon both the variables being correlated" (Guilford, 1973, p. 312). With the use of a partial correlation coefficient, it is possible to control for the interaction effects found from the findings of hypothesis 1 and to partial them out. By straightforward generalization, a first-order r may be expressed as the following formula:

$$r_{12:3} = \frac{r_{12} - (r_{13} r_{23})}{\sqrt{(1 - r_{13}^2)(1 - r_{23}^2)}}$$

The above formula is referred to as a partial r of the first-order based upon three zero-order r's.

The specific formula utilized in testing hypotheses 2, 3, and 4 was the following statistic from OSIRIS III, Institute for Social Research, The University of Michigan:

$$r_{ij \cdot kl \dots} = \sqrt{\beta_{ij \cdot kl \dots} \beta_{ji \cdot kl \dots}}$$

where: β_{ij} = the weight applied to variable j in the regression equation for predicting variable i

β_{ji} = the weight applied to variable i in the regression equation for predicting variable j

Exhibit M: Partial-Order r - (cont'd)

These partial correlation coefficients are computed as the square root of the product of the two regression coefficients. These coefficients may be defined in the ordinary fashion as the square root of the proportion of the variance of the dependent variable explained by the independent variable in the equation.

The Significance of Partial r

Before using the partial r and testing for significance by means of a "t" test, a standard error of the partial r must first be calculated. The standard error of a partial coefficient of correlation is the same as that for a Pearson r except that the number of degrees of freedom in the denominator of the formula for the standard error is a bit smaller (Guilford, 1973, p. 313-314). Guilford indicates the significance of an obtained partial r may be obtained by the following formula:

$$\sigma_{r_{12 \cdot 34 \dots m}} = \frac{1 - r_{12 \cdot 34 \dots m}^2}{\sqrt{N - m}}$$

where: m = the number of variables involved
 N = number of cases

Exhibit M: Partial-Order r - (cont'd)

Utilizing a simple transformation of the standard error of the partial r to accommodate a "t" test, the following formula is derived:

$$t = \frac{r_{12.34}}{\sqrt{(1 - r_{12.34}^2) / (N-m)}}$$

The above "t" test formula was used to test the significance of the first-order partial r. Since hypotheses 2, 3, and 4 each indicated directionality (i.e., $r > 0$), the test of significance is a one-tail test. In order to accept a given hypothesis, the partial correlation coefficient must be of sufficient size to reject the null hypothesis (H_0). In this case, the null hypothesis assumes a value for $r \leq 0$. The degree of freedom of the significance test is $N - 3$.

[illegible]

N - 1,2P3

• $p < .05$

** $p < .01$

NOTE: Four hundred and two correlations are significant out of a possible four hundred and eighty-five.

Exhibit O: Effects of the Relative Importance
of Individual Difference Variables
and the Facets of Task Structure
Beta Weight's on the Outcome Variables

Independent Variable	Beta Weight	Moderator Variable	Beta Weight	Dependent Variable
Autonomy	.27	Internal-External	.07	Overall Satisfaction
Skill Variety	.16	Internal-External	.09	Overall Satisfaction
Task Feedback	.30	Internal-External	.08	Overall Satisfaction
Task Identity	.20	Internal-External	.07	Overall Satisfaction
Upward Influence	.29	Internal-External	.06	Overall Satisfaction
Autonomy	.28	Self-Esteem	.04	Overall Satisfaction
Skill Variety	.16	Self-Esteem	.05	Overall Satisfaction
Task Feedback	.30	Self-Esteem	.05	Overall Satisfaction
Task Identity	.20	Self-Esteem	.04	Overall Satisfaction
Upward Influence	.29	Self-Esteem	.04	Overall Satisfaction
Autonomy	.28	Hierarchy of Authority	.05	Overall Satisfaction
Skill Variety	.16	Hierarchy of Authority	.03	Overall Satisfaction
Task Feedback	.30	Hierarchy of Authority	.05	Overall Satisfaction
Task Identity	.20	Hierarchy of Authority	.04	Overall Satisfaction
Upward Influence	.29	Hierarchy of Authority	.05	Overall Satisfaction
Autonomy	.28	Division of Labor	.20	Overall Satisfaction
Skill Variety	.15	Division of Labor	.20	Overall Satisfaction
Task Feedback	.29	Division of Labor	.19	Overall Satisfaction
Task Identity	.19	Division of Labor	.19	Overall Satisfaction
Upward Influence	.29	Division of Labor	.22	Overall Satisfaction

Exhibit O: Effects of the Relative Importance
of Individual Difference Variables
and the Facets of Task Structure Beta
Weight's on the Outcome Variables - (cont'd)

Independent Variable	Beta Weight	Moderator Variable	Beta Weight	Dependent Variable
Autonomy	.26	Rules for Incumbents	.28	Overall Satisfaction
Skill Variety	.12	Rules for Incumbents	.28	Overall Satisfaction
Task Feedback	.30	Rules for Incumbents	.26	Overall Satisfaction
Task Identity	.17	Rules for Incumbents	.27	Overall Satisfaction
Upward Influence	.30	Rules for Incumbents	.31	Overall Satisfaction
Autonomy	.26	Need for Achievement	.17	Overall Satisfaction
Skill Variety	.14	Need for Achievement	.18	Overall Satisfaction
Task Feedback	.28	Need for Achievement	.16	Overall Satisfaction
Task Identity	.18	Need for Achievement	.16	Overall Satisfaction
Upward Influence	.28	Need for Achievement	.18	Overall Satisfaction
Autonomy	.27	Need for Affiliation	.09	Overall Satisfaction
Skill Variety	.15	Need for Affiliation	.10	Overall Satisfaction
Task Feedback	.29	Need for Affiliation	.09	Overall Satisfaction
Task Identity	.19	Need for Affiliation	.11	Overall Satisfaction
Upward Influence	.28	Need for Affiliation	.08	Overall Satisfaction
Autonomy	.08	Internal-External	.07	Pay Satisfaction
Skill Variety	.09	Internal-External	.08	Pay Satisfaction
Task Feedback	.13	Internal-External	.07	Pay Satisfaction
Task Identity	.06	Internal-External	.09	Pay Satisfaction
Upward Influence	.08	Internal-External	.07	Pay Satisfaction

Exhibit O: Effects of the Relative Importance
of Individual Difference Variables
and the Facets of Task Structure Beta
Weight's on the Outcome Variables - (cont'd)

Independent Variable	Beta Weight	Moderator Variable	Beta Weight	Dependent Variable
Autonomy	.09	Self-Esteem	.05	Pay Satisfaction
Skill Variety	.10	Self-Esteem	.05	Pay Satisfaction
Task Feedback	.14	Self-Esteem	.05	Pay Satisfaction
Task Identity	.07	Self-Esteem	.05	Pay Satisfaction
Upward Influence	.08	Self-Esteem	.05	Pay Satisfaction
Autonomy	.09	Hierarchy of Authority	.05	Pay Satisfaction
Skill Variety	.10	Hierarchy of Authority	.05	Pay Satisfaction
Task Feedback	.14	Hierarchy of Authority	.05	Pay Satisfaction
Task Identity	.07	Hierarchy of Authority	.04	Pay Satisfaction
Upward Influence	.08	Hierarchy of Authority	.04	Pay Satisfaction
Autonomy	.08	Division of Labor	.19	Pay Satisfaction
Skill Variety	.09	Division of Labor	.19	Pay Satisfaction
Task Feedback	.13	Division of Labor	.19	Pay Satisfaction
Task Identity	.06	Division of Labor	.19	Pay Satisfaction
Upward Influence	.08	Division of Labor	.19	Pay Satisfaction
Autonomy	.09	Rules for Incumbents	.22	Pay Satisfaction
Skill Variety	.06	Rules for Incumbents	.22	Pay Satisfaction
Task Feedback	.14	Rules for Incumbents	.21	Pay Satisfaction
Task Identity	.07	Rules for Incumbents	.22	Pay Satisfaction
Upward Influence	.09	Rules for Incumbents	.22	Pay Satisfaction

Exhibit O: Effects of the Relative Importance
of Individual Difference Variables
and the Facets of Task Structure Beta
Weight's on the Outcome Variables - (cont'd)

Independent Variable	Beta Weight	Moderator Variable	Beta Weight	Dependent Variable
Autonomy	.08	Need for Achievement	.05	Pay Satisfaction
Skill Variety	.09	Need for Achievement	.06	Pay Satisfaction
Task Feedback	.14	Need for Achievement	.06	Pay Satisfaction
Task Identity	.07	Need for Achievement	.05	Pay Satisfaction
Upward Influence	.08	Need for Achievement	.06	Pay Satisfaction
Autonomy	.09	Need for Affiliation	.05	Pay Satisfaction
Skill Variety	.10	Need for Affiliation	.05	Pay Satisfaction
Task Feedback	.14	Need for Affiliation	.04	Pay Satisfaction
Task Identity	.07	Need for Affiliation	.04	Pay Satisfaction
Upward Influence	.08	Need for Affiliation	.03	Pay Satisfaction
Autonomy	.21	Internal-External	.03	Job Satisfaction
Skill Variety	.10	Internal-External	.04	Job Satisfaction
Task Feedback	.20	Internal-External	.03	Job Satisfaction
Task Identity	.18	Internal-External	.04	Job Satisfaction
Upward Influence	.21	Internal-External	.04	Job Satisfaction
Autonomy	.22	Self-Esteem	.07	Job Satisfaction
Skill Variety	.10	Self-Esteem	.06	Job Satisfaction
Task Feedback	.21	Self-Esteem	.05	Job Satisfaction
Task Identity	.18	Self-Esteem	.07	Job Satisfaction
Upward Influence	.21	Self-Esteem	.06	Job Satisfaction

Exhibit O: Effects of the Relative Importance
of Individual Difference Variables
and the Facets of Task Structure Beta
Weight's on the Outcome Variables - (cont'd)

Independent Variable	Beta Weight	Moderator Variable	Beta Weight	Dependent Variable
Autonomy	.22	Hierarchy of Authority	.07	Job Satisfaction
Skill Variety	.11	Hierarchy of Authority	.06	Job Satisfaction
Task Feedback	.21	Hierarchy of Authority	.08	Job Satisfaction
Task Identity	.19	Hierarchy of Authority	.07	Job Satisfaction
Upward Influence	.21	Hierarchy of Authority	.06	Job Satisfaction
Autonomy	.21	Division of Labor	.17	Job Satisfaction
Skill Variety	.10	Division of Labor	.17	Job Satisfaction
Task Feedback	.20	Division of Labor	.17	Job Satisfaction
Task Identity	.18	Division of Labor	.16	Job Satisfaction
Upward Influence	.22	Division of Labor	.19	Job Satisfaction
Autonomy	.20	Rules for Incumbents	.22	Job Satisfaction
Skill Variety	.06	Rules for Incumbents	.22	Job Satisfaction
Task Feedback	.18	Rules for Incumbents	.21	Job Satisfaction
Task Identity	.16	Rules for Incumbents	.21	Job Satisfaction
Upward Influence	.22	Rules for Incumbents	.24	Job Satisfaction
Autonomy	.20	Need for Achievement	.19	Job Satisfaction
Skill Variety	.07	Need for Achievement	.20	Job Satisfaction
Task Feedback	.18	Need for Achievement	.18	Job Satisfaction
Task Identity	.16	Need for Achievement	.19	Job Satisfaction
Upward Influence	.20	Need for Achievement	.21	Job Satisfaction

Exhibit O: Effects of the Relative Importance
of Individual Difference Variables
and the Facets of Task Structure Beta
Weight's on the Outcome Variables - (cont'd)

Independent Variable	Beta Weight	Moderator Variable	Beta Weight	Dependent Variable
Autonomy	.21	Need for Affiliation	.06	Job Satisfaction
Skill Variety	.10	Need for Affiliation	.07	Job Satisfaction
Task Feedback	.20	Need for Affiliation	.07	Job Satisfaction
Task Identity	.18	Need for Affiliation	.07	Job Satisfaction
Upward Influence	.20	Need for Affiliation	.05	Job Satisfaction

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