

MANAGERIAL MOTIVATION
THE IMPACT OF SOME ORGANIZATIONAL
AND PERSONALITY VARIABLES

By

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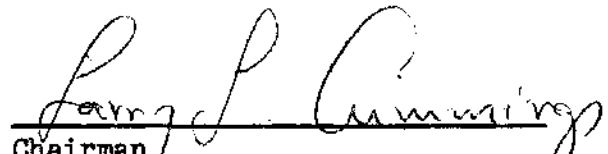
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ACCEPTANCE


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PREFACE

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ABSTRACT

This study was undertaken to investigate the motivational determinants of managers' work behaviors. A motivational model that integrates a Maslow type need hierarchy system and Hebb's notion of discrepancy was developed which subsequently helped identify the dependent variables.

Four basic objectives have been the bases for the study:

1. To investigate the relationships between the dependent variables (measures of managers' perceptions of need and need satisfaction) and the independent variables (task and organizational variables).

2. To investigate the interaction effects between the independent variables as they relate to the dependent variables.

3. To investigate the moderating effects of certain personal characteristics of managers upon the relationships between independent and dependent variables.

4. To test the validity and generality of Herzberg's two-factor theory.

The results show that managers' perceptions of needs and need satisfaction are significantly related to most of the organizational variables studied, that interaction effects do exist between certain organizational variables, that age, education, seniority, and interest in job significantly modify the relationships between some independent and dependent variables, and that contrary to Herzberg's theory, job factors leading to feelings of job satisfaction are neither separate nor independent

from job factors leading to feelings of job dissatisfaction. Similarly, both job content and job context factors contribute to feelings of job satisfaction and job dissatisfaction.

INTRODUCTION

Managers play a highly important role in the process of achieving and sustaining economic growth. They appear to represent a distinct group worthy of study. This study is focused on managerial motivation as a factor influencing their work behaviors.

Vroom (1964, p. 203) postulates that performance is a function of ability times motivation. However, since the managerial role is customarily reflected in acts of decision-making and similar cognitive processes, it is expected that motivation would be more closely related to managerial performance than is the ability factor. Kogan and Wallach (1964, p. 1) argue that "decision making and other cognitive processes are colored, and indeed dominated by, motivational factors."

By generating new knowledge on managerial motivation, this study is expected to contribute to efforts directed at understanding and eventually improving managerial job performance.

CHAPTER I

ORIGIN OF THE STUDY

General Statement of the Problem

This is a study about the motivation of managers. It is an attempt to shed some light on the question of what are the factors that energize managers and/or focus their behaviors in one direction or another. Specifically, the purpose is to investigate the motivational determinants of managers' work behaviors, as perceived by managers themselves, in terms of the needs or goals they seek to satisfy on their jobs and how they conceive of the managerial role as instrumental in satisfying those needs. Consequently, managerial motivation is defined here as managers' perceptions of need importance, need fulfillment, need fulfillment deficiencies, possibility of need fulfillment, and their perceptions of the environmental variables influencing need fulfillment. The concept manager refers to any organizational member holding a supervisory position entailing the making of decisions and directing the actions of other organizational members. This definition includes all members of an organization from the first-line supervisor up to the head of the organization. Furthermore, the concept need, as used in this study, is limited to psychologically and socially derived needs thus excluding biologically based needs.

Managerial motivation is emerging as a separate area of motivational studies after a long period of neglect. Haire (1959), Porter (1961, 1964), and Vroom (1965) have pointed out the relative absence of studies on the motivation of managers as compared to the efforts directed at understanding the motivation of blue-collar workers.

Some Early Research

Prior to 1959 one can find little systematic treatment of managerial motivation. However, certain notions on the motivation of managers can be found in the writings of Barnard (1938), Gordon (1945), and Griffin (1949). Power, prestige, adventure, accomplishment, security, status, and professional excellence were recognized to underlie managers' work behaviors. Henry (1948) in a study of executive personality and job success, administered the Thematic Apperception Test (TAT) to three hundred managers. He found that managers are characterized by a strong need for achievement. Morse (1953) found a sample of 73 supervisors to be more satisfied than the rank and file in the areas of security, fringe benefits, fairness of treatment, and working conditions. However, they were less satisfied than their subordinates with their salaries.

Prevailing Conceptions of Managerial Motivation

Since 1959 the area of managerial motivation has received great attention. More systematic and better designed studies are now directed at investigating the question of what motivates managerial work behaviors.

Two basic streams of thought are reflected in the present state of the literature in this area; the motivation-hygiene concept as a framework for both supporting and conflicting research, and the need-hierarchy concept as a base for empirical research.

The Herzberg et al. (1959) approach to the study of managerial motivation (the motivation-hygiene approach) centers around three basic concepts: factors, attitudes, and effects. Based on their study of approximately 200 Pittsburgh accountants and engineers, Herzberg et al. (1959) advocated a theory of motivation that postulates a dual conception of man. The theory asserts that job satisfaction and job dissatisfaction are determined by different and separate factors. Factors related to job content (motivators) determine job satisfaction, while factors related to job context (hygienes) determine job dissatisfaction. This motivation-hygiene theory has generated a long stream of both supporting and conflicting research over the last few years.

On the other hand, Lyman Porter (1961, 1962, 1963a, 1963b, 1963c) has based his inquiries into job attitudes of managers upon a Maslow (1954) type need-hierarchy. He was concerned with investigating the question of how managers perceive the psychological characteristics of their jobs. He approached this problem by looking at the relationships between certain organizational variables (managerial level, line and staff type of job, organization size, and organization structure) on the one hand, and managers' perceptions of needs and need satisfaction on the other. Porter's general findings point to a general tendency for such perceptions to vary with variations in the organizational variables studied.

Both Herzberg's and Porter's approaches share a basic characteristic; that of trying to relate job attitudes or some measures of managerial motivation to some task or organizational variables. The present study attempts to penetrate more deeply into the nature of managerial motivation by focusing on three kinds of relationships:

1. The relationships between some measures of managerial motivation (as the dependent variables) and several organizational variables (as the independent variables).

2. The moderating effects of some personal characteristics of managers upon the relationships between the independent and dependent variables.

3. The interaction effects between the independent variables themselves as they relate to the dependent variables.

Elements in the Study Design

The dependent variables. Measures of managerial motivation used in this study are the following:

1. perceived need importance
2. perceived need fulfillment
3. perceived need fulfillment deficiency
4. perceived possibility of need fulfillment
5. perception of the environmental variables affecting need fulfillment as sources of satisfaction or dissatisfaction

The theoretical model from which the above variables are derived as well as their operational definitions are detailed in Chapter III.

The independent variables. The independent variables studied are certain organizational properties thought to have some relationships to managerial motivation. The variables of managerial level, line versus staff type of job, total organization size, and flat versus tall organization structure have been studied by Porter and are included here for the purpose of replicating Porter's work. Furthermore, some other important organizational variables are included since their relations to managerial motivation are unknown. The variables studied are:

1. Organizational subunit size. This refers to "any grouping of the members of a business organization that systematically excludes part of

the membership of that organization" (Porter and Lawler, 1965, p. 34). Several studies on the relationship between organization subunit size and job attitudes have concluded that members of small organizational subunits are more satisfied than members of large subunits (Talacchi, 1960; Kerr, Koppelman, and Parker, 1961; Campbell, 1952; and Worthy, 1950). However, none of the above studies had managers as its subjects--all being concerned with blue-collar workers. Thus, it is risky to generalize such findings to managers.

2. Role-set diversity. This concept refers to the number of different work relationships that the manager maintains with people inside and outside the organization (Merton, 1957). There is some evidence that the more diversified or heterogeneous his role-set, the more conflict the manager is likely to perceive (Merton, 1957; and Snoek, 1966). Since role-set heterogeneity contributes to perceived role conflict which is defined as felt difficulty in doing the job, then it implies more job dissatisfaction (Kahn et al., 1964).

3. Flow of job-related information. There are some research findings to the effect that the more central a member is in the communication net, the more likely he is to be satisfied with his position (Bass, 1965, p. 286). Kahn et al. (1964) studied role ambiguity in terms of the adequacy of job-related information in managerial positions. They found that the clear and consistent communication of such information to the person concerned tends to increase his certainty with respect to his role requirements and his place in the organization. On the other hand, when the person lacks such information, he will experience role ambiguity. Based on such logic one would expect job-related information to be significantly related to managerial motivation.

4. Organizational location. This variable refers to the geographical location of the manager's position with respect to the central office. Three dimensions of this spatial variable can be conceived; basically office work, basically field work, and combined office/field type of work. Some evidence (Paine et al., 1966) indicates that managers in field work are generally more satisfied than managers in central office work suggesting that this variable may be of importance in explaining individual differences in motivation.

The moderating variables. There is growing evidence that the relationships between certain organizational variables and managers' perceptions of needs and need satisfaction may vary depending upon certain characteristics of the individual. This observation points to the significance of what has been noted as moderating variables. Ghiselli (1963) states that the moderating variables tend to modify the relationships between the independent and dependent variables by sorting aggregations of individuals into more homogeneous groups. Pelz (1951) indicated that research findings on the relationships between supervisory practices (supposedly the independent variable) and employee attitudes (or the dependent variable) were up to that time puzzling and confusing. Certain supervisory practices were assumed to lead to employee satisfaction, and certain other supervisory practices were assumed to lead to employee dissatisfaction. However, data analysis of employee attitudes in high and low satisfaction groups and the practices of their respective supervisors provided inconclusive and conflicting results. However, when the supervisor's influence over the social environment in which his employees were functioning was taken into consideration it was apparent that "supervisor's influence within the department does condition the way his

supervisory behavior relates to employee attitudes" (Pelz, 1951, p. 63). Reed (1962) investigated the relationship between upward mobility among executives (as the independent variable) and the accuracy with which they communicate problem related information to their superiors (as the dependent variable). This relationship was generally found to be negative. However, Reed found

this relationship to be conditioned or modified by the degree of interpersonal trust held by these executives for their superiors, and there is some evidence to suggest that the relationship is also conditioned by the degree of the superiors' influence as perceived by their subordinates (Reed, 1962, p. 15).

Kahn et al. (1964) found that personality variables such as sensitivity mediate the relationships between objective and experienced situations of role conflict. Likewise, they found that the need for cognition (need to understand) mediates the relationship between ambiguity and frustration; persons with high need for cognition will be more frustrated in situations of high ambiguity than persons with lower need for cognition (having more tolerance for ambiguity). Kogan and Wallach (1964) were looking at the personality correlates of decision-making behavior in a sample of male and female subjects. For the sample as a whole, no evidence has been found to support the hypotheses that there is a direct association between impulsiveness and risk taking, and that self-sufficiency and independence are related to an individual's preference for chance and skill strategies thus entailing intermediate risk levels. However, taking the male and the female samples separately indicated the presence of very substantial moderator effects between personality and decision-making domains. Thus breaking the whole sample down along the

sex variable reflected its moderating effects on the relationship between risk taking and personality.

For purposes of this study, age, education, interest in job, and seniority with the company are expected to moderate the relationships between managerial motivation and the organizational variables studied. Research findings as to the moderating effects of the above variables are relatively few and conflicting. Age was found by Porter (1962) to have no effect on the relationship between managers' perceptions of needs and need satisfaction on the one hand, and organizational variables on the other. Saleh (1964) found that preretirees' (between the ages of 60-65) perceptions of job factors as sources of satisfaction or dissatisfaction vary depending on the period of their career considered. Looking backward in their career they perceived job content factors as sources of job satisfaction and job context factors as sources of job dissatisfaction. However, when looking at the time left before retirement, job context factors were perceived as sources of job satisfaction. This implies that managers' perceptions of needs and need satisfaction tend to vary with variations in age. Seniority is expected to act in the same direction as the age variable in moderating the relationships between managerial motivation and organizational variables. Holding organizational variables constant, managers having different seniorities are expected to vary in their perceptions of needs and need satisfaction. Education has been the subject of conflicting research findings. Andrews and Henry (1963) and Klein and Maher (1966) found that higher educated managers tend to be less satisfied with their pay than lower educated managers at the same managerial level. However, Lawler and Porter (1966) failed to find such difference. Interest in job is measured here using Vroom's (1962) measure of

ego-involvement. Vroom (1962) found that the relationship between a person's opportunity for self-expression and his job satisfaction and satisfaction with self (generally positive) to be more significant in the case of those ego-involved in their jobs than in the case of persons low in ego-involvement. This suggests that interest in job may also act to modify the relationship between managerial motivation and organizational variables.

The above variables were selected since they all reflect differences in the individual manager's psychological make-up in terms of ambitions or expectations, perspectives, and orientations.

The Interaction Effects Between the Organizational Variables

Porter and Lawler (1965) have pointed to the growing evidence regarding the interrelationships between and among different organizational variables as they affect managerial motivation. For example, they have pointed out that the effects of either subunit size or total organization size could be more adequately depicted if one takes into account the organizational level or levels being considered. It also has been suggested that the relationship between organization structure (tall/flat) and job satisfaction is modified considerably by the total size of the organization being studied.

On the basis of such evidence, the present study is concerned with investigating this interdependence among the various organizational variables under study since this should contribute to a better understanding of managerial motivation.

In a schematic way, the variables under study can be presented as follows:

<u>Independent Variables</u>	<u>Moderating Variables</u>	<u>Dependent Variables</u> Managers' Perceptions of:
1. Managerial level	1. Age	1. Need importance
2. Line/staff type of job	2. Education	2. Need fulfillment deficiency
3. Total organization size	3. Interest in job	3. Need fulfillment
4. Organization structure	4. Seniority	4. Possibility of need fulfillment
5. Role-set diversity		5. Environmental variables affecting need fulfillment
6. Adequacy of job-related information		
7. Organizational location		
8. Organizational subunit size		

Basic Postulates

This study is designed around some basic postulates that indicate the nature of the expected relationships between and among the various classes of variables included in the above scheme.

1. Measures of managerial motivation tend to vary with variations in certain organizational variables.
2. Certain personal characteristics of managers tend to modify the magnitude as well as the direction of the relationships between managerial motivation and organizational variables.
3. Organizational variables affecting managerial motivation tend to be interrelated.
4. Variables determining job satisfaction are neither independent nor separate from those determining job dissatisfaction.

While having Porter's work as its starting point, the present study attempts to extend Porter's studies by looking at the relationships between managerial motivation and additional organizational variables, the interdependence among the organizational variables, and the moderating effects of managers' personal characteristics. Moreover, the

study attempts to generate a test of Herzberg's theory of the motivation to work. This can be done by investigating how managers perceive the environmental variables affecting need satisfaction as either satisfying or dissatisfying. The prediction is that factors leading to job satisfaction and job dissatisfaction do not divide neatly into job content factors (motivators) and job context factors (hygienes) as the theory postulates. Managers' perceptions of job factors as sources of satisfaction or dissatisfaction are expected to be related to their positions on the various organizational variables studied.

Plan of the Study

The plan of the study can best be understood by a brief review of each of the succeeding chapters.

Chapter II develops a general theoretical and methodological perspective for the study. It contains a review of basic motivational theories and empirical studies of managerial motivation. Attention is given to the interaction between theory and research in this area of study.

Chapter III presents the research design and methodology of the present study. It includes the motivational model specifying the dependent variables to be considered, and the hypotheses to be tested. Chapter III also includes the description of measures used to operationalize the various variables, the data generating instrument, the results of the pilot study conducted to test the questionnaire used in this study, identification and description of the subjects, and the statistical procedure for data analysis.

Chapter IV presents the results of statistical data analysis and relates findings to the stated hypotheses.

Chapter V is a summary of the results and the conclusions of the study and its implications for further research.

Summary

Managerial motivation is emerging as a distinctive area of motivational studies. The present study is designed to extend Porter's work on job attitudes in management by looking at the relationships between certain organizational variables and measures of managerial motivation, the interdependence among the organizational variables, and the moderating effects of managers' personal characteristics. Furthermore, the study attempts to test the generality and validity of Herzberg's two-factor theory.

CHAPTER II

MOTIVATIONAL THEORY AND THE STUDY OF MANAGERIAL MOTIVATION

On Theory and Research

Theory and research are two interacting elements in the process of generating new knowledge. Theory explains and predicts thus affecting research by providing coherence for diverse data, and by developing frameworks or schematizations that give orientation to and guide research activities (Lachman, 1956, p. 50).

On the other hand, research plays an important role in theory construction. Research initiates theory by discovering new relationships and variables, through the introduction of new methods of empirical research, and by exerting pressure for new foci of theoretic interest and clearer concepts (Merton, 1957). The point to be emphasized is the reciprocal relationships between theory and research and their continuous interaction.

In this chapter, we are concerned with previous research on managerial motivation; and, given the relationship between theory and research, we are also concerned with motivation theories in an attempt to find how they have influenced empirical studies of managerial motivation and to what extent they have been affected by such studies. Another purpose of reviewing the literature is to help identify the important variables affecting the phenomenon under study. Based upon

such a review, a theoretical model can be developed to guide the present research.

Motivation Theory

The literature on motivation is vast and complex, and a single, comprehensive, definitive theory of motivation does not exist. Brown (1961) states that

contemporary psychological theorists as well as their more philosophically oriented predecessors have frequently relied upon some kind of moving, pushing, driving or energizing force or agency. The ubiquity of the concept of motivation, in one guise or another, is nevertheless surprising when we consider that its meaning is often scandalously vague.

According to Scott (unpublished manuscript) some of the difficulties in motivational psychology can be attributed to the vagueness of the constructs need and drive. Needs are assumed to derive from deficits. The concept of need is used as an explanation of the arousal as well as the direction of behavior. Some writers argue that the vagueness of the concept of need has been aggravated by the adoption of the term need to designate motives that are not biologically based and that do not stem from an internal deficit; for example, the need for power or the need for achievement (Isaacson et al., 1965). Young (1961) notes that "the concept of need is firmly imbedded within motivational psychology but it is nevertheless, a source of confusion." Maslow (1954), on the other hand, defends the use of the concept need in that "the study of motivation must be in part the study of the ultimate human goals or desires or needs."

Another difficulty in motivational psychology is the disagreement on the domain of the concept of motivation. Broad and narrow

conceptions of motivation are encountered in the literature and various definitions have been proposed by different theorists. Maier (1949) limits motivation to goal oriented behavior. Brown and Farber (1951) assign to motivation the function of energizing behavior while that of directing and regulating activity is attributed to learning. These narrow conceptions of motivation are contrasted with some other broader points of view. Young (1961) argues that all behavior is motivated, and Bindra (1959) defines motivation so as to include both energizing and regulating behavior.

Despite the divergent views of motivation in the psychological literature hinted at above, the following motivational theories can be identified:

1. Learning theories of motivation
2. Hedonic theories of motivation
3. Theories of social motivation
4. The self-actualizing theories

The following discussion is concerned with the interaction between the above theories of motivation and empirical research on managerial motivation.

Learning Theories of Motivation

Motivational theories that have developed from learning theory have stressed the concepts of drive and incentive together with the notion of reinforcement. (Cofer and Appley, 1964, p. 467.)

Hull's drive reduction theory is the classic example of this approach. The theory stemmed directly from considerations of biological survival.

For Hull, bodily needs were the ultimate basis of motivation. The term drive was used by Hull in the following manner:

Since a need, either actual or potential, usually precedes and accompanies the action of an organism, the need is often said to motivate or drive the associated activity.
(Hull, 1943, p. 57.)

In the Hullian system, behavior arises and is modified primarily in reference to the organism's needs which he must act to reduce. Hull conceived primary drives "as stimuli the reduction of which is reinforcing so far as the acquisition of responses is concerned" (Cofer and Appley, 1964, p. 503). Hull presented a list of primary drives arising from states of tissue needs and having the general function of arousing or activating behavior.

Drive as such mobilizes the organism into general action but did not, without learning, lead to specific behaviors appropriate to specific motivations and goals.
(Cofer and Appley, 1964, p. 503.)

Consequently, Hull proposed that those acts that are immediately followed by a "need reduction" are retained, a notion similar to Thorndike's law of effect. These primary motivational mechanisms (primary drives and primary reinforcements) are supplemented in the Hullian system by a conception of acquired or secondary drives and reinforcements.

The concept drive is assumed to combine in a multiplicative fashion with the habitual or instinctive reactive tendencies to yield the excitatory potential of which behavior is said to be a more or less direct function.
(Brown, 1961, p. 99.)

Drive reduction theories of motivation have been under attack from such theorists as Young (1949), Hebb (1949), Maslow (1954),

Allport (1937, 1955) and McClelland et al. (1953). The arguments against the drive reduction theory are basically the following:

1. A motive has two aspects; energizing and directing behavior. The drive concept has been conceived only as an energizing force while most psychologists regard the directing and patterning aspect as the chief problem in motivation (Hebb, 1949, p. 172).

2. The tension notion is usually conceived as a negative affective state derived from painful experience. However, there is evidence that other kinds of stimulation give rise to innate gratifications. Thus, any theory of motivation, it is argued, "should take account of the active comforts and pleasures of life as well as the discomforts, tensions and their relief" (McClelland et al., 1953, p. 12).

3. Hebb (1949, p. 178) argues that the law of reinforcement suffers from the same weaknesses of the law of effect since pain does not always act to eliminate a response.

4. The emphasis on biological needs seems to limit motivation much too narrowly (Hebb, 1949, p. 179).

In assessing the impact of learning theories of motivation upon the study of managerial motivation, it can be said that the concept of need reduction implicitly underlies most of the studies on motivation in industry including the present study. However, the concept need is not restricted to biological needs; rather, the emphasis is always on psychological and social needs. The individual is assumed to have certain needs which he seeks to satisfy (reduce) on the job.

In general, the studies of attitudes and productivity stem from the law of effect notion in learning theory. Organisms tend to seek out situations that are rewarding and avoid those that are punishing (Haire, 1959, p. 81).

Hedonic Motivation Theories

Hedonic motivational models stress affect as an important aspect of motivation. The affective arousal models (McClelland et al., 1953; and McClelland, 1955) are examples of this category of motivation theory.

McClelland (1955, p. 226) defines motive as a

strong affective association, characterized by an anticipatory goal reaction and based on past association of certain cues with pleasure or pain.

According to McClelland's (1955) affective arousal model, all motives are learned, with emotions as the basis of motivation. Both positive (approach) and negative (avoidance) motives are distinguished as having different effects on behavior. This model states that

states of biological needs have no unique function in producing motives; they are merely one of the conditions which dependably (in all individuals) give rise to motivational associations. (McClelland, 1955, p. 231.)

The basic principle underlying these theories is that

certain stimuli or situations involving discrepancies between expectations (adaptation level) and perception are sources of primary, unlearned affect, either positive or negative in nature. Cues which are paired with these affective states, changes in these affective states and the conditions producing them become capable of reintegrating a state (A') derived from the original affective state (A) but not identical with it. (McClelland et al., 1953, p. 23.)

Another expression of the hedonic principle in motivation theories is Vroom's model of motivation. This model is basically ahistorical

in form--behavior at a given time depends upon events occurring at that time only. Basic concepts in Vroom's model are the following (Vroom, 1964):

1. At any given point in time, a person has preferences among outcomes or states of nature. Preferences refer to the relationships between the strength of a person's desire for, or attraction toward, two outcomes. Vroom uses the term valence to refer to this affective orientation toward outcomes.

2. An outcome may be positively valent (preferred), negatively valent (unpreferred), or has a zero valence (indifferent).

3. The term motive refers to a preference for a class of outcomes.

4. While valence refers to anticipated satisfaction from an outcome, value refers to actual satisfaction that an outcome provides, and there may be a discrepancy between them.

5. Expectancy refers to the person's idea of how an action would lead to the desired outcome.

The concept force combines valences and expectancies, as choices by persons among alternative courses of action are hypothesized to depend on the relative strength of forces. Each force is in turn hypothesized to be equal to the algebraic sum of the products of the valence of outcomes and expectancies that outcomes will be attained. (Vroom, 1964, p. 18.)

Hedonic theories of motivation have influenced the study of managerial motivation through the work of McClelland et al. (1953) on the need for achievement that led to some investigations of achievement motivation in managers. On the other hand, Hedonism is reflected in Herzberg's motivation-hygiene concept (1959) that has generated a long stream of both supporting and conflicting research on the motivation to work.

Achievement Motivation Studies

Veroff et al. (1960) using a nationwide sample of men employed on a full-time basis in various occupations, and measuring need for achievement (n achievement) by the Thematic Apperception Test (TAT), found managers among those having the highest scores. Progressive increases in n achievement scores were associated with increases in occupational levels. Meyer et al. (1961) used the (TAT) to assess motive patterns and risk preferences associated with entrepreneurship. Subjects were two groups of managers and specialists in a large industrial organization. The two groups were matched in age, education, and the organizational level. Managers were found to have significantly stronger n achievement than the specialists. McClelland (1961) has compared the achievement imagery of 153 male college graduates with that of 50 male middle-managers. He found evidence of substantially greater n achievement among the business executives than among the college-educated comparison group. McClelland's finding that managers tend to have higher n achievement was found to hold up in other cultures as well. Managers in the United States, Italy, and Poland were found to have higher n achievement than professionals (students of law, medicine, and theology). McClelland (1961) reports a tendency for sales managers to have higher n achievement scores than managers in other functional areas.

Motivation-Hygiene Studies

The motivation-hygiene concept proposed by Herzberg et al. (1959) reflects the influence of hedonism on the study of the motivation to work among managers. According to Herzberg (1966, p. 71)

The Motivation to Work was a study designed to test the concept that man has two sets of needs; his need to avoid pain and his need to grow psychologically.

To test this hypothesis, approximately 200 engineers and accountants representing a cross section of Pittsburgh industry were interviewed. The study was based on the recall or story telling method. Subjects were asked to recall two incidents when they felt exceptionally good and exceptionally bad about their jobs. The interviewers proceeded to probe for the reasons why the subjects felt the way they did. Subjects were also asked if the feelings of satisfaction or dissatisfaction in regard to their work had affected their performance, their personal relationships and their well being. Finally, the nature of the events that helped the subjects' attitudes return to their normal state was elicited. The Herzberg et al. approach to the study of job attitudes ~~centers~~ around three concepts: factors, attitudes, and effects. By obtaining from the individual an account of his high or low morale, an inference of factors and effects could be made. This approach has its origin in the critical incident method developed by Flanagan (1954). The results of the study were formulated in a theory of job attitudes, the motivation-hygiene theory. The theory postulates that:

1. Job factors producing job satisfaction are different and separate from job factors producing job dissatisfaction. Therefore, it is more adequate to view job satisfaction and job dissatisfaction as two separate and parallel continua rather than the obverse of each other.

2. Job content factors determine job satisfaction. These include: task achievement, recognition for achievement, intrinsic interest in the

task, increased task responsibility, advancement or occupational growth, and the possibility of occupational growth.

3. Job context factors determine job dissatisfaction. They include: company policy and administration, supervision, working conditions, salary, personal life, and status.

This dual approach to work motivation represents a departure from earlier conceptions of job satisfaction where variables affecting satisfaction were viewed as operating on a continuum such that

a factor that influences job attitudes should influence them in such a way that the positive or negative impact of the same factor should lead to a corresponding increase or decrease in morale. (Herzberg et al., 1959, p. 111.)

A great deal of controversy has centered essentially on this finding of Herzberg et al. Kahn (1961, p. 10) felt that the findings

are in part the result of relying entirely on the respondent for a description of his job attitudes, the factors which occasioned them, and their behavioral consequences.

Similarly, Vroom and Maier (1961) questioned the legitimacy of Herzberg's conclusion. They argued that

there is a risk in inferring the actual causes of satisfaction and dissatisfaction from descriptions of events by individuals as it seems possible that the obtained differences between events may reflect defensive processes at work within the individual. (Vroom and Maier, 1961, p. 433.)

Ewen (1964) criticized the motivation-hygiene theory on the following grounds:

1. The narrow range of jobs studied
2. The use of only one measure of job attitudes
3. The absence of any validity and reliability data
4. The absence of an overall measure of satisfaction

Dunnette (1965) concluded that

the two-factor notion of job satisfaction is an oversimplified representation of the motivational milieu of the world of work.

Porter (1966) argued that

factors involved in feelings of satisfaction and dissatisfaction do not appear to divide as neatly as was the case with Herzberg's original study. (Porter, 1966, p. 411.)

A number of studies attempting to test the validity and generality of the two-factor theory were reported over the last few years. Herzberg (1965 a) administered a questionnaire containing a translation of the interview that was used with the accountants and engineers in the original study (1959) to 139 lower level supervisors representing a wide range of industries in Finland. He found the Finnish managers to be greatly the same as the Pittsburgh subjects in their perception of job factors, and concluded that the study with Finnish managers is confirmatory of the basic theory of motivation-hygiene. Schwartz et al. (1963) replicated Herzberg's study using a questionnaire patterned after his interview. The study highly corroborated the two-factor theory. Saleh (1964) studied attitude change among preretirees. Herzberg's motivators with the only exception of "possibility of growth" were found to occur significantly more in the satisfying events than in the dissatisfying events. Four hygiene factors were found significantly more often among the dissatisfaction sequences. Myers (1964) tested the

two-factor theory with a sample made up of five occupational groups. He reported job factors to group naturally into motivation-hygiene dichotomies. Friedlander (1964) confirmed the hypothesis that satisfiers and dissatisfiers are not opposite ends of a common set of dimensions. Friedlander and Walton (1964) reported that positive and negative motivation are separate and not merely the opposite of each other. Job content factors were found to lead to positive motivation, while job context factors were found to produce negative motivation. Friedlander (1965, 1966) confirmed the hypothesis of intrinsic and extrinsic job characteristics being separate and leading to different job feelings. Gruenfeld (1962) reported that job content factors were the most preferred and job context factors were the least preferred aspects of the job for a sample of 52 industrial engineers.

On the negative side of the issue, evidence that the two-factor theory is an oversimplified explanation of the motivation to work has accumulated. Friedlander (1963) found both intrinsic and extrinsic job factors to be associated with job satisfaction. Friedlander (1965, 1966), Gruenfeld (1962), and Centers and Bugental (1966) found that individuals at different occupational levels differ in the importance they attach to job factors as sources of satisfaction or dissatisfaction. White-collars and those at higher occupational levels derived greatest satisfaction from the motivators (job content factors) while blue-collars and those at lower occupational levels attach more importance to the hygienes (job context factors) as sources of job satisfaction. Halpern (1966) reported that motivators and hygienes were both sources of job satisfaction. Dunnette (1965) arrived at the conclusion that the same job factors were contributors to both satisfaction and dissatisfaction.

Gordon (1965) failed to support the theory that specific job factors affect attitudes in only one direction. However, he supported the finding that the motivators contribute relatively more to job satisfaction. Burke (1966) argued that Herzberg's motivators and hygienes are neither unidimensional nor independent constructs. Wernimont (1966) reported that either extrinsic or intrinsic job factors can cause both satisfied and dissatisfied feelings about the job. Ewen et al. (1966) reported that an empirical test of opposing hypotheses derived from the two-factor theory on the one hand, and the traditional theory of job satisfaction on the other hand has failed to wholly support either theory. Graen (1966 a) subjected the same data generated by Ewen et al. (1966) to a two-way analysis of variance on a priori contrasts. The results clearly support the traditional theory against the two-factor theory. Graen (1966 b) showed that Herzberg's classification of 16 job factors when presented as items and rated by subjects rather than raters do not result in homogeneous groupings in the factor analytic sense. Graen concluded that Herzberg's 16 factors

reflect more the rater's hypotheses concerning the compositions and interrelations of dimensions than the respondent's own perceptions. (Graen, 1966 b, p. 564.)

In summarizing the case against the two-factor theory it is found that: motivators and hygienes are not unidimensional, that either one can produce job satisfaction or job dissatisfaction, and that intrinsic factors are generally more strongly related to both over-all satisfaction and over-all dissatisfaction than the extrinsic factors.

Theories of Social Motivation

This category of motivational theories emphasizes external and situational factors as having substantial motivational effects on the individual. Such theories place the emphasis on circumstances external to the individual, thus they have dealt with the role of incentives, the effect of knowledge of results, level of aspiration, rivalry and competition as motivations of human behavior (Cofer and Appley, 1964, p. 769). Variables such as probability of success and failure, motive strength and processes such as communications patterns, leadership styles and group interactions are recognized to influence the effectiveness of the incentive as such in arousing the motivation to perform. The assumption behind social motivation theories is that motives are basically an interaction between the individual and his environment (Haire, 1959).

Studies on managers' perceptions of pay reflect this situational variable in motivation. Andrews and Henry (1963) reported that managers with higher education are generally less satisfied with their pay than managers at the same organizational level but having lower education. The highly educated manager tends to compare his pay with persons outside the organization while those with lower education tend to compare their pay with their peers within the organization. Lawler and Porter (1963) reported that the higher a manager's pay, commensurate with his level in the organization, the more satisfied he was likely to be with his compensation. Lawler and Porter (1966) failed to support the relationship between level of education and satisfaction with pay. However, Klein and Maher (1966) reported that for managers at the same level and holding skill and age constant, higher education was associated with

relatively lower satisfaction with pay thus supporting Andrews and Henry's (1963) finding.

Self-Actualization Theories

The last set of motivation theories to be considered is that called the self-actualization theories. They stress the uniqueness of the individual and emphasize a holistic approach to human experience and conduct (Cofer and Appley, 1964).

The organism has one basic tendency and striving to actualize, maintain and enhance the experiencing organism.
(Rogers, 1955, p. 83.)

The ultimate driving force is the person's unrelenting will to come to grips with himself, a wish to grow and to leave nothing untouched that prevents growth. (Horney, 1942, p. 175.)

Maslow's (1954) theory of human motivation is an example of such an approach. The theory postulates that needs organize themselves in a hierarchy of prepotency. According to Maslow, a motive is an unsatisfied need which dominates the organism. When a specified need is gratified--and he talks in terms of relative gratification--it is no longer a primary determinant of behavior, and another need of higher order will seek satisfaction and in turn dominate the organism until it is satisfied. (Maslow, 1954.) Maslow classifies basic human needs into physiological, safety, belongingness and love, esteem, and self-actualization needs. Such needs are not related to specific isolated somatic bases, rather they are needs of the whole person. While stressing needs or goals as the basis of motivational life, Maslow also recognizes the impact of the situation. He argues that

Human motivation rarely actualizes itself in behavior except in relation to the situation and to other people.
(Maslow, 1954, p. 75.)

Allport's theory of "Becoming" (1955) stresses the point that motives are functionally autonomous, that they are frequently known in awareness and that they are highly individual. Both Maslow and Allport criticize the drive reduction theory and argue in favor of "growth" as well as "deficit" motivation.

Need-Hierarchy Type Studies

Maslow's concept of need hierarchy has influenced empirical studies of managerial motivation to a great extent. Adopting that concept as a basis for his studies, Porter contributed to a better understanding of managers' job attitudes. Porter (1964) expressed the purpose of his research on managerial job attitudes as an attempt to investigate how managers perceive the psychological characteristics of their jobs. This was done by looking at the relationships between several organizational variables (managerial level, staff/line type of job, organization size, and flat/tall organization structure) on the one hand, and managers' attitudes toward needs and need satisfaction on the other. Need categories used by Porter include the security, social, esteem, autonomy, and self-realization need areas. Porter's findings are summarized as follows:

The effect of job level. Porter (1961) concluded that

the vertical location of management positions appear to be an important variable in determining the extent to which psychological needs are fulfilled.

Higher-level managers perceive more fulfillment especially of the higher-order needs than do managers at lower organizational levels. Higher-level managers were also found to attach more importance to higher-order needs while lower-level managers tend to attach more importance to lower-order needs.

The effect of line/staff type of job. Line managers reported perceiving more need fulfillment than do staff managers. Similarly, there appears to be significant differences between line and staff managers in the importance they attach to different needs. However, Porter (1963 b) states that

differences between line and staff jobs are consistently and considerably smaller than the differences between jobs at the vice president level and jobs at lower management levels.

The effect of company size. Porter (1963 c) pointed to the possibility of some interactive effects between managerial level and total company size as size affects perceived need fulfillment deficiencies. At lower levels of management, small company managers were more satisfied than large company managers. However, at higher levels of management, large company managers were more satisfied than small company managers. Total company size has little relationship to the perception of need importance.

The effect of organization structure. Porter and Lawler (1964) and Porter and Siegel (1965) investigated the effect of organization structure on managerial job attitudes in the United States as well as 13 foreign countries. In both studies there was no evidence for an over-all superiority of flat over tall organization structures in producing greater need satisfaction for managers. However, organization size seemed to

interact with type of structure to produce the following patterns of need satisfaction:

1. In companies with less than 5000 employees, flat organization structures produced more need satisfaction (especially self-actualization needs).

2. In companies with more than 5000 employees, tall structures produced greater satisfaction (especially security and social needs).

Other Need-Hierarchy Type Studies

Rosen and Weaver (1960) found managers at four different levels assessing the importance of job conditions in much the same manner. Rosen (1961) reported the finding that the higher one goes in the managerial hierarchy, the greater are the rewards of the environment; a finding that was supported by Porter (1961). Paine et al. (1966) using a Porter's type questionnaire, found managers engaged in field work to be more satisfied than managers in office work. On the other hand, managers in a government agency were less satisfied across all need items than private industry managers. Miller (1966) confirmed Porter's finding about the vertical location of management positions being a factor determining the extent to which need fulfillment is perceived. Miller found national union officials at lower organizational levels to be less satisfied than higher-level union officials. Edel (1966) arrived at the same conclusion using Porter's questionnaire with first line supervisors and middle managers in a large government agency. Eran (1966) using the same instrument, reported that middle managers perceiving themselves most like top managers were significantly more satisfied than middle managers perceiving themselves most like lower managers.

Heller and Porter (1966) found American and British middle managers to be about equal in their perceptions of need satisfaction and need importance. Haire et al. (1963, 1966) reported that managers in 13 different countries ranked the different need areas used by Porter (1961) in terms of their importance in the same manner.

Summary and Conclusions

The study of the literature on motivational theory and studies on managerial motivation enables us to draw the following conclusions regarding the state of the literature:

1. A theory of managerial motivation that is unified, definitive, and universal does not exist.
2. The two basic streams of thought that characterize the area of managerial motivation at the present time are Herzberg's two-factor theory (reflecting a hedonic conception of motivation), and Porter's need-hierarchy type approach (based on Maslow's theory of human motivation).
3. The concept need underlies both Herzberg's and Porter's approaches. Herzberg advocates the notion of two basic needs; pain avoidance and psychological growth. Porter uses Maslow's need hierarchy system with the exclusion of the physiological needs.
4. Needs are conceived in the two basic approaches to managerial motivation as socially and psychologically determined (as distinct from biologically based).
5. The environment is postulated as an important aspect of the motivation phenomenon. Porter studied the impact of certain organizational variables upon managers' job attitudes. Herzberg et al.

distinguished between job content and job context factors assigning to the latter the function of producing job dissatisfaction.

6. The self-actualizing concept underlies both approaches. Maslow's need-hierarchy system adopted by Porter emphasizes the self-actualizing tendency of man and advocates a notion of growth motivation as compared with deficiency concepts of motivation proposed by drive reduction theories. On the other hand, Herzberg et al. stressed man's duality of needs assigning to the motivators the function of satisfying man's need to grow psychologically.

7. Earlier conceptions of managerial motivation viewed management as a homogeneous class (Herzberg et al., 1959). However, later studies (Rosen and Weaver, 1960; and Porter, 1961, 1962, 1963 a, 1963 b, 1963 c) tended to differentiate managers along the dimensions of different organizational variables. More recently, the moderating effects of managers' individual differences on the relationships between organizational variables and managerial motivation have been recognized (Porter, 1966).

8. Earlier studies of managerial motivation looked at managers in the same organization (Rosen and Weaver, 1960). Later studies attempted to compare the motivations of managers in different organizations (Porter; Paine et al., 1966; and Miller, 1966), and in different cultures (Haire et al., 1963, 1966; and Heller and Porter, 1966).

9. Herzberg's two-factor theory has been supported by several researchers generally using the same story telling method. However, follow-up studies using different methods have produced conflicting results that question the generality and validity of the theory.

10. Porter's major finding about the effect of job level on managers' perceptions of needs and need satisfaction was confirmed by other researchers using the same data generating instrument that Porter developed.

The following matrix represents a summary of the basic studies on managerial motivation that have been reported over the period 1959-1966:

A Summary of Studies on Managerial Motivation

<u>Researcher and Purpose of study</u>	<u>Procedure</u>	<u>Major findings</u>
Herzberg <u>et al.</u> (1959) A study of factors affecting managers' job attitudes	Subjects had to recall two incidents of good and bad feelings about their jobs	Job satisfaction and job dissatisfaction are separate. Job content factors lead to satisfaction and job context factors lead to dissatisfaction
Rosen and Weaver (1960) A study of motivation in four managerial levels	Subjects had to rate 24 items in terms of their importance to them	Managers at the four levels assess the importance of the various items (job characteristics) in about the same way
Veroff <u>et al.</u> (1960) A study to assess motivation in a nationwide sample	TAT administered to 486 full-time employed men	Managers were among those having the highest scores in n achievement. Progressive increases in n achievement scores with increases in occupational level
Porter (1961) A study of perceived need fulfillment in bottom and middle management jobs	First level supervisors and middle managers responded to a need hierarchy type questionnaire	Vertical location of management positions is an important factor affecting managers' perceptions of need satisfaction. Higher-level managers perceive more need fulfillment than lower-level managers

<u>Researcher and Purpose of study</u>	<u>Procedure</u>	<u>Major findings</u>
Rosen (1961) A study of desirable work attributes in four managerial levels	Subjects had to rate 24 job characteristics in terms of their existence in their work environments	The higher one goes up the managerial hier- archy, the greater are the rewards of the environments
McClelland (1961) A study of n achieve- ment as a factor in economic growth	TAT administered to 800 managers in four countries	Managers have higher n achievement than professionals in U.S.A., Italy and Poland. A fairly close correlation between the average n achievement of managers and relative levels of economic growth
McClelland (1961) A study of achieve- ment imagery in managers	TAT administered to 50 male middle managers and a com- parison group of male college graduates	Greater n achievement among managers than among college edu- cated comparison group from a variety of occupations
Meyer et al. (1961) A study of motive patterns and risk preferences in entrepreneurs	TAT administered to two groups of managers and specialists in one organization	Managers have signifi- cantly stronger n achievement than the specialists
Porter (1962) Effect of job level on managers' per- ceptions of need fulfillment deficiencies	Managers in a nationwide sample responded to a need-hierarchy type questionnaire	Confirmation of Porter's 1961 finding re the effect of job level on need ful- fillment. Higher level managers get more need fulfillment than lower level managers
Gruenfeld (1962) A study of the motivations of industrial supervisors	Supervisors at three occupational levels had to rate eighteen job factors in terms of their desirability	Job content factors were the most preferred and job context factors were the least preferred. Those at higher occu- pational levels attach more importance to job content factors than those at lower levels

<u>Researcher and Purpose of study</u>	<u>Procedure</u>	<u>Major findings</u>
Schwartz et al. (1963) A replication of Herzberg's study on the motivation to work	The story telling method used with supervisors in the utility industry	The study generally substantiates the two-factor theory
Andrews and Henry (1963) A study of management attitudes toward pay	Two hundred, ninety-nine managers responded to a questionnaire	Higher level managers and those with more education are less likely to compare their pay with individuals at the same level in the company. Degrees of satisfaction with pay varied with management level and educational level
Saleh (1964) A study of attitude change in the pre-retirement period	A Herzberg-like interview	Preretirees' perception of motivators and hygienes differ according to the period of their career considered
Friedlander (1964) A study of job characteristics as satisfiers and dissatisfiers	The story telling method	Job satisfaction and job dissatisfaction are not a bipolar continuum. Intrinsic job characteristics are more important to both satisfaction and dissatisfaction than the extrinsic aspects
Friedlander and Walton (1964) A study of positive and negative motivation toward work	Subjects had to indicate reasons for remaining in or leaving their present organization	Reasons for remaining with the organization are quite different from and not merely the opposite of reasons for leaving the organization. Work process leads to positive motivation and work context leads to negative motivation

<u>Researcher and Purpose of study</u>	<u>Procedure</u>	<u>Major findings</u>
Porter and Lawler (1964) The effects of organization structure on job satisfaction among managers	A need-hierarchy type questionnaire mailed to a nationwide sample	No over-all superiority of flat over tall structures in producing greater need satisfactions for managers
Myers (1964) A study about the motivation to work among five occupational groups	Subjects had to rank job factors in terms of their importance	Job factors were found to group naturally into motivation-hygiene dichotomies
Porter and Siegel (1965) The effects of organization structure on job satisfaction of foreign managers	Managers in 13 countries responded to a questionnaire having 13 need items	Findings generally agree with those obtained by Porter and Lawler (1964)
Herzberg (1965) The motivation to work among Finnish supervisors	A questionnaire patterned after the original story telling method	Job factors were found to generally group into motivation-hygiene. A support to the 2-factor theory
Dunnette (1965) A study of factor structures of unusually satisfying and unusually dissatisfying job situations	A questionnaire mailed to 496 persons from 6 occupations	Some Herzberg motivators were related to satisfying job situations but his hygienes were not related to dissatisfying job situations
Friedlander (1965) A study of comparative work value systems	Questionnaire filled out by civil service workers	White-collar workers derived greatest satisfaction from the motivators while blue-collar workers derived greatest satisfaction from hygienes
Gordon (1965) The relationship of satisfiers and dissatisfiers to productivity, turnover, and morale	A questionnaire mailed to 683 insurance agents	A positive relationship was found between satisfaction with motivators and self-reported production, but no relationship between hygienes and production

<u>Researcher and Purpose of study</u>	<u>Procedure</u>	<u>Major findings</u>
Burke (1966) A study of the uni- dimensionality of Herzberg's moti- vators and hygienes	Subjects had to rate 10 motivators and hygienes in terms of their importance	Motivators and hygienes are neither uni- dimensional nor independent
Paine et al. (1966) Need satisfaction of managers in a govern- ment agency	Porter's question- naire was filled out by field and office managers	Field managers are more satisfied than office managers. Both types of managers are less satisfied than private industry managers across all need items
Heller and Porter (1966) Need satisfaction in two national samples	Porter's question- naire was filled out by American and British middle managers	Middle managers studied in both countries tend to be greatly the same in their perceptions of need fulfillment deficiencies and need importance
Halpern (1966) The relative contri- butions of motivator and hygiene factors to over-all job satisfaction	Questionnaire asking subjects to rate job factors in terms of their importance	Subjects were equally satisfied with both the motivators and hygienes. However, the motivators have contributed signifi- cantly more to over-all job satisfaction than did the hygiene factors
Wernimont (1966) Intrinsic and ex- trinsic factors in job satisfaction	Accountants and engineers responded to a questionnaire	Either extrinsic or intrinsic factors can cause both satisfied and dissatisfied feelings about the job
Centers and Bugental (1966) Intrinsic and ex- trinsic job motivations	Interviews with 692 employed adults	Individuals at higher occupational levels place greater value on intrinsic job factors than do individuals at lower occupational levels who place more value on extrinsic job factors

<u>Researcher and Purpose of study</u>	<u>Procedure</u>	<u>Major findings</u>
Eran (1966) Relationships between self-perceived person- ality traits and job attitudes in middle management jobs	Porter's question- naire and Ghiselli's SDI completed by 456 middle managers	Managers describing themselves most like top managers were significantly more satis- fied than managers describing themselves most like lower- managers
Miller (1966) Need satisfaction among national union officials	Porter's question- naire completed by officials at dif- ferent levels	Higher level officials perceive more need satisfaction than do lower level officials
Edel (1966) A study of managerial motivation	Porter's question- naire completed by managers in a govern- ment agency	Those at the middle management level per- ceive more need ful- fillment than first line supervisors. Job level is an important factor affecting need satisfaction
Ewen et al. (1966) An empirical test of Herzberg's two-factor theory	Hypotheses derived from the two-factor theory and from the traditional theory were tested	Data did not support either theory com- pletely. The two- factor theory is un- complete explanation of the motivation to work
Graen (1966 b) A study of the generality of Herzberg's theory	A questionnaire was developed to repre- sent Herzberg's 16 factors	Engineers responding to the questionnaire did not group items in the same 16 factors as Herzberg's raters did. Herzberg's factors reflect more the raters' judgment than the respondents' feelings

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

Theoretical Orientation

The motivational model guiding the present study has its origin in Hebb's (1949) "Discrepancy Hypothesis" and in Maslow's (1954) theory of human motivation. Hebb's discrepancy hypothesis states that affective arousal is a function of the size of the discrepancy between the stimulus (perception), and the organism's expectations. Hebb assumed that when there is a small amount of disparity between expected and obtained, pleasure (satisfaction) occurs. On the other hand, when the disparity is too large, there is unpleasantness or (dissatisfaction). When there is an exact matching of expected and obtained, Hebb assumed that no affect is involved (Hebb, 1949).

The basic concept of need hierarchy advocated by Maslow's theory of human motivation constitutes an important input that is integrated with Hebb's discrepancy hypothesis to develop the motivational model underlying the present study. This model will be termed the "Discrepancy Model."

The Discrepancy Model

The basic propositions of this model are:

1. An individual has basic needs or ultimate goals. The model includes the psychological needs only.

2. The individual has certain expectations as to the required level of need satisfaction. Expectations refer to the level of need satisfaction that the individual thinks should exist in a certain situation.
3. The individual while interacting with his environment, perceives an actual level of need satisfaction (what he feels he is now getting).
4. If the perceived level of need satisfaction is less than the level the individual thinks he should be getting, there exists a discrepancy, i.e. an unsatisfied need or a motive in Maslow's terms.
5. The size of the discrepancy partially determines the individual's satisfaction with need fulfillment. The greater the gap between expectations and perception (discrepancy), the less the individual's satisfaction or the more his dissatisfaction.
6. The individual's perception of the importance of a certain need in addition to his perception of the possibility of attaining the required (expected) level of need satisfaction will interact with the size of the discrepancy to determine his satisfaction or dissatisfaction with the actual level of need fulfillment.
7. Satisfaction in turn will influence the individual's expectations and perception of need fulfillment as well as his perceptions of need importance and possibility of need fulfillment.

The variables representing motivation in the discrepancy model are operationally defined as follows:

Basic needs - Ultimate goals or ends that the individual is seeking to satisfy. The term need in this model is limited to psychologically and socially based needs only, thus excluding physiological needs.

Expectations - Cognitive anticipations that a certain level of need fulfillment should exist in a certain situation.

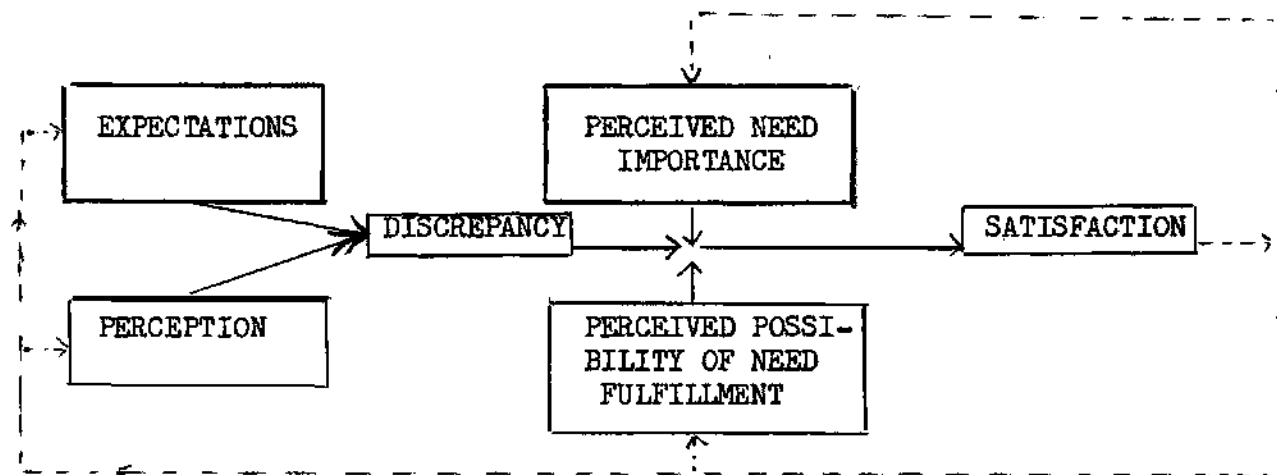
Discrepancy - The disparity between expected and obtained levels of need satisfaction.

Need Importance - The individual's cognition of how important a need is to him.

Possibility of need fulfillment - A probability concept referring to the degree of certainty that the expected level of need fulfillment will be obtained.

Figure 3-I presents a diagrammatic summary of the basic notions incorporated in the discrepancy model.

Figure 3-I
The Discrepancy Model



In the above model the terms used are defined as follows:

Expectations refer to the person's idea of what he should be obtaining in a certain situation.

Perception refers to the person's idea of what he is actually obtaining.

Discrepancy refers to the individual's perception of need fulfillment deficiency.

The interaction between discrepancy, need importance, and perceived possibility of need fulfillment determines the individual's satisfaction with need fulfillment.

There is a feedback mechanism that operates in the direction of satisfaction influencing perceptions of need importance, possibility of need fulfillment as well as expectations and actual need fulfillment.

Hypotheses

This study is designed to test some basic hypotheses. Hypotheses will be stated in the null with each hypothesis followed by sub-hypotheses specifying the direction of the predicted relationships.

HYPOTHESIS # 1

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No relationships exist between managerial motivation and the organizational variables under study.

Subhypothesis # 1

Perceived need fulfillment deficiencies tend to vary with variations in the organizational variables under study.

1. Higher-level managers are more likely to perceive less need fulfillment deficiencies than lower-level managers.
2. Line managers tend to perceive less need fulfillment deficiencies than staff managers do.
3. The more diversified a role-set is, the more likely that the manager will perceive more need fulfillment deficiencies.
4. The less job-related information a manager gets, the more need fulfillment deficiencies he is likely to perceive.
5. Managers engaged in field work tend to perceive less need fulfillment deficiencies than office managers do.
6. Managers working in small organizational subunits are more likely to perceive less need fulfillment deficiencies than managers working in large subunits.

Subhypothesis # 2

Perceived need fulfillment tends to vary with variations in the organizational variables under study.

1. Higher-level managers tend to get more fulfillment of the higher-order needs (autonomy and self-actualization) while lower-level managers tend to get more fulfillment of the lower-order needs (security, social, and esteem).
2. Line managers tend to perceive more need fulfillment than staff managers do.
3. Managers in less diversified role-sets tend to perceive more need fulfillment than managers in the highly diversified role-sets do.

4. The less job-related information a manager gets, the less need fulfillment he is likely to perceive.
5. Managers engaged in field work tend to perceive more need fulfillment than office managers do.
6. Managers in small organizational subunits are more likely to perceive more need fulfillment than managers in large subunits.

Subhypothesis # 3

Perceived need importance tends to vary with variations in the organizational variables under study.

1. Higher-level managers are more likely to attach more importance to higher-order needs than lower-level managers who tend to attach more importance to lower-order needs.
2. Line managers attach more importance to autonomy needs than staff managers do. Staff managers tend to attach more importance to social and esteem needs.
3. Managers having heterogeneous role-sets tend to attach more importance to security, social, and esteem needs than managers having less diversified role-sets.
4. Managers receiving inadequate job-related information tend to attach more importance to the need for being in the know than managers receiving adequate information.

Subhypothesis # 4

Perceived possibility of need fulfillment tends to vary with variations in the organizational variables under study.

1. Higher-level managers are more likely to perceive greater possibilities for need fulfillment than lower-level managers do.
2. Line managers are more likely to perceive greater possibilities for need satisfaction than staff managers do.
3. Managers in small subunit sizes are expected to perceive greater possibilities for need fulfillment than managers in large subunit sizes do.

4. Managers receiving adequate job-related information are more likely to perceive greater possibilities for need achievement than managers having inadequate job-related information do.
5. Managers engaged in office work are more likely to perceive greater possibilities for need fulfillment than managers engaged in field work do.
6. Managers in less diversified role-sets are more likely to perceive greater possibilities for need fulfillment than managers in more diversified role-sets do.

HYPOTHESIS # 2

No interaction effects exist among the organizational variables studied in their relationships to managerial motivation.

Subhypothesis # 1

Organizational variables tend to be interrelated in their relationships to managerial motivation.

1. Managerial level and total company size tend to be interrelated in their impact on managerial motivation. At lower levels of management, small company managers tend to be more satisfied with their need fulfillment than large company managers. At higher levels of management, large company managers are more likely to get greater need fulfillment than small company managers.
2. Total company size and organization structure interact as they relate to managerial motivation. In small companies, flat structures produce more need satisfaction than tall structures. However, in large companies, tall structures produce greater need satisfaction.
3. Subunit size and role-set composition tend to be interrelated. The larger the subunit size, the more likely that managers' role-set will be more diversified and the more need fulfillment deficiencies and less possibilities of need fulfillment they will perceive.

HYPOTHESIS # 3

The relationships between the organizational variables studied and managerial motivation are not dependent upon the characteristics of the individual managers.

Subhypothesis # 1

Relationships between the organizational variables and managerial motivation are likely to be modified by certain personal characteristics of individual managers.

1. Holding organizational variables constant, it is expected that older managers, those with low education, more seniority, and high interest in the job tend to perceive more need fulfillment, less possibilities for need fulfillment, and attach more importance to lower-order needs than younger managers and those with high education, less seniority, and low interest in the job.

HYPOTHESIS # 4

Variables determining job satisfaction are neither independent nor separate from those determining job dissatisfaction.

Subhypothesis # 1

Variables leading to job satisfaction are not separate from those leading to job dissatisfaction.

1. Job factors can contribute equally well to job satisfaction and job dissatisfaction.

Subhypothesis # 2

Managers' perceptions of job factors as sources of satisfaction or dissatisfaction vary according to their position on the various organizational variables studied.

1. Higher-level managers are more likely to perceive job content factors as sources of satisfaction while lower-level managers are more likely to derive their greatest satisfaction from job context factors.

Description of Measures

Measures of the dependent variables.

1. Perceived need importance. This was measured by asking the respondent to specify how important each of the need items is to him. The ratings were given along a seven-point scale as follows:

: 1 : 2 : 3 : 4 : 5 : 6 : 7 :
(minimum) (maximum)

2. Perceived need fulfillment deficiency. This was taken as the difference between the respondent's ratings of the following:

- a. How much of the characteristic being rated is there now?
- b. How much of the characteristic being rated do you think should be there?

The measure of perceived need fulfillment deficiency was at the same time a measure of job satisfaction, i.e. a measure of the difference between what the manager feels he is now getting from his job, and what he thinks he should be getting from his job. This difference can range from 0.0 to 6.0, thus the greater the difference is, the less is the satisfaction or the greater the dissatisfaction.

3. Perceived possibility of need fulfillment. This variable represents the manager's perception of the chances that he will be able to get what he thinks he should be getting from his job. This was measured by asking the manager to rate such chance along the following scale:

: 10% : 20% : 30% : 40% : 50% : 60% : 70% : 80% : 90% : 100% :

4. Perceived need fulfillment. This was measured by asking the respondent to specify how much is there now of the characteristic being rated along the seven-point scale mentioned above.

5. Perception of the environmental variables. This was measured by presenting the manager with a list of fifteen environmental variables that have been reported in the literature as having relationships to managerial job satisfaction. Each manager was asked to indicate those variables that he thinks induce him to stay with his present company (supposedly sources of satisfaction), and those variables that might induce him to leave the company (supposedly sources of dissatisfaction).

Measures of the independent variables.

1. Managerial level. Level was classified into three categories; top, middle, and lower middle. From the respondent's answer to a question on the title of his position, if he describes himself as either a president or a vice president he would be placed in the first category. Managers were placed in the other two categories according to the following ratio:

$$\frac{\text{number of supervisory levels above me}}{\text{total number of supervisory levels}}$$

2. Company size. Different size categories were established on the basis of the respondent's estimate of the total number of employees in his company (management and nonmanagement). For purposes of this study three size categories were used as follows:

- a. large - companies having 5000 employees or more
- b. medium - companies having from 500 to 4999 employees
- c. small - companies having less than 500 employees

3. Subunit size. From the respondent's answer to a question on the number of employees (management and nonmanagement) in his department or division, he was classified into one of the following size categories:

- a. large - 500 or more
- b. medium - 50 - 499
- c. small - less than 50

4. Type of job. The respondent was asked to indicate the nature of his job along the three dimensions of line, staff, and combined line/staff.

5. Organizational structure. The respondent was asked to indicate the number of supervisory levels in his organization. The ratio of the number of levels to the total number of employees in the company was the criterion for determining the type of organization structure within each size category:

- a. flat: managers employed by companies having the fewest levels relative to their size
- b. intermediate: managers employed by companies having a middle number of levels relative to their size
- c. tall: managers employed by companies having the greatest number of levels relative to their size

6. Organizational location. This variable was ascertained by asking the manager to respond to the following question:

How do you rate your job along the following dimensions?

- a. basically office
- b. basically field
- c. combined office/field

7. Role-set diversity. This variable was measured by presenting the manager with a list of potential members of a role-set and he was asked to identify the number of them with whom he maintains work relationships. The larger the number of relationships the manager has to maintain, the more diversified his role-set was considered to be.

8. Flow of job-related information. The manager was asked to respond to the following question:

How do you rate the adequacy of information needed for action in your management position in terms of quantity and quality from all sources?

Three alternatives were given the respondent ranging from adequate through sufficient to inadequate.

Measures of the moderating variables.

Information on the respondent's age, educational level, educational type, and seniority were obtained by direct questions in part three of the questionnaire. The variable of interest in job was measured using Vroom's measure of ego-involvement (1962) as outlined in part two of the questionnaire (Appendix I).

Data Generating Instrument

The information required for the study was collected by means of a mailed questionnaire. The questionnaire (Appendix I) is divided into three parts. Part one is designed to get at the respondent's perceptions of need importance, need fulfillment and need fulfillment deficiency, as well as his perception of the possibility of need achievement in his managerial position. This part was designed along the same lines of Porter's questionnaire (1961). However, it differs from Porter's by adding the question on perceived possibility of need attainment following the discrepancy model discussed above. Question I of part two is designed to get at the manager's perception of the environmental variables as sources of satisfaction or dissatisfaction. Fifteen task and organizational variables derived from the study of the literature and mostly corresponding to Herzberg's (1959) factors were presented to the

respondent who was asked to indicate for each variable whether it induces him to stay with his present organization, makes him think of leaving the organization or both. The remainder of part two and part three of the questionnaire are designed to get the measures of the independent and the moderating variables.

The Pilot Study

A pilot study was conducted with the purpose of pretesting the questionnaire before mailing it to the national sample. Subjects of this pilot study were eighteen managers in a local branch of a national department and mail order store, and a pharmaceutical company. Tables 3-1 and 3-2 represent the basic characteristics of the subjects.

Table 3-1
Subject Characteristics
in the Pilot Study

Characteristic	Mean
Age (years)	40.3
Years of schooling	15.5
Seniority (years)	14.6
Experience (years)	18.8
Salary	\$2083/month

Table 3-2
Subjects in the Pilot Study
Classified by Educational Type

Educational type	% of subjects
Engineering	7%
Economics and Business	66%
Liberal Arts	20%
Other	7%
	100%

The pilot study has resulted in certain changes that had to be introduced on the questionnaire to make it more clear and specific.

1. In part one the order of presenting the subquestions under each need item was changed by placing the question of how important is the need to the subject at the top followed by the other questions. This change was made with the purpose of keeping the continuity of items (c) and (d) in the new order.

2. In question one, part two, the phrase "Please do not omit any factor: Each factor should be checked once or twice" was added as it appeared from the pilot study that respondents gave their opinions as to some factors but not the others. On the other hand, the phrase "the most important" was omitted from the wording of the question as it led some subjects to disregard some factors that they thought unimportant in either direction, while it is the researcher's objective to get at their opinions as to all factors.

3. In the question on role-set composition (three, part two), the qualification "whether from your own department, from other departments, or from outside the company" was added to clarify the meaning of the question.

4. In the question on the flow of job-related information (four, part two), the qualification "in terms of quantity and quality from all sources" was added to precisely specify the term "adequacy."

5. In questions five and twelve of part three the following clarification was added: "If you are working in separate plant, branch, or a division of a multi-unit company, give the number of employees in your unit only."

Subjects and Sample Characteristics

Subjects used in this study were managers of American business organizations who have attended the Indiana Executive Program (IEP) and the Indiana Management Institute (IMI) during the period 1952-1966.

The questionnaire was mailed to 950 managers and returns were received from 456 or 48%. Usable returns amounted to 425 or 44.7%.

Exhibit I

The Questionnaire Respondents

Type of program

IEP	236	55.5%
IMI	189	44.5%

Geographical location

Indiana	250	58.8%
Ohio	35	8.3%
N. Carolina	24	5.6%
Kentucky	20	4.7%
Michigan	14	3.3%
Illinois	12	2.9%
Texas	7	1.6%
Other	63	14.8%

Level

Top	83	19.5%
Middle	260	61.1%
Lower middle	82	19.4%

Line and Staff

Line	137	32.2%
Staff	123	28.9%
Combined line/staff	164	38.6%
Not classified	1	.2%

Size of respondents' firms

Small (under 500)	134	31.5%
Medium (500 to 4,900)	164	38.6%
Large (over 5,000)	127	29.9%

The Questionnaire Respondents (Continued)

954

Department or function

Sales, marketing	57	13.4%
Finance	27	6.4%
Accounting	17	4.0%
Personnel	30	7.1%
Purchasing	13	3.1%
Research and Development	23	5.4%
Production	82	19.3%
General Administration	99	23.3%
Other	75	17.6%
Not ascertained	2	.5%

Type of company

Transportation	14	3.3%
Postal	29	6.8%
Power and Light	18	4.2%
Wholesale, Retail trade	34	8.0%
Finance	37	8.7%
Chemical	49	11.5%
Mining	1	.2%
Steel	27	6.4%
Manufacturing	148	34.8%
Other	68	16.0%

Years of schooling

0 - 12 years	53	12.5%
13 - 16 years	237	55.8%
17 years and over	119	28.0%
Not ascertained	16	3.8%

Type of college education

Engineering	135	31.8%
Law	6	1.4%
Economics and Business	138	32.5%
Liberal Arts	50	11.8%
Other	42	9.9%

The Questionnaire Respondents (Continued)

Year attended IU Executive Program

1953	5	1.2%
1954	13	3.1%
1955	17	4.0%
1956	17	4.0%
1957	5	1.2%
1958	7	1.6%
1959	30	7.1%
1960	33	7.8%
1961	35	8.2%
1962	53	12.5%
1963	62	14.6%
1964	44	10.4%
1965	45	10.6%
1966	59	13.9%

From the above exhibit it appears that our sample is largely composed of the most recent participants in the Indiana Executive Programs.

Statistical Procedure

The statistical procedure employed aimed at three kinds of relationships:

1. The relationships between the independent and dependent variables.
2. The interdependence among the independent variables as they relate to the dependent variables.
3. The moderating effects of managers' personal characteristics.

Each of the above relationships was the subject of a different analytical scheme. Generally, nonparametric statistical tests were used since they do not require prior assumptions about the distribution of the population from which our sample was drawn. Moreover, nonparametric tests were more appropriate to the kind of data we have since they can be applied to ordinal or even nominal kinds of measurements (Siegel, 1956).

The first level of analysis. To get at the relationships between the dependent and independent variables, the following procedure was applied:

1. The mean of each dependent variable for the various subgroups of managers according to their positions on the organizational variables was computed for each need category and each item within each category.

2. In order to bring into focus the direction of the relationship between the independent and the dependent variables under study, a sign test was performed by computing the number of changes in the size of the mean of each dependent variable as a result of changes in the magnitude of an independent variable. However, to test the significance of such relationships the Kruskal-Wallis one-way analysis of variance by ranks test was used. The Kruskal-Wallis test has asymptotic efficiency of $\frac{3}{\pi} \approx 95.5\%$ (Siegel, 1956, p. 193).

The second level of analysis. To get at the interdependence among the organizational variables, a Chi square test was applied on the plus and minus totals of the number of changes in the size of the mean of each dependent variable as a result of moving along the dimensions of two independent variables at a time. This procedure was repeated for each independent variable with respect to every other independent variable.

The third level of analysis. To get at the moderating effects of the personal characteristics of managers, the analysis in level one was broken down along the different dimensions of the moderating variables. For example, perceived need importance of top managers was broken down into different age groups, education levels, . . . and so forth. The means of the subgroups (age groups) were subjected to a sign test and a Chi square test was performed on the plus and minus totals of the

number of changes in the size of each mean as a result of moving along the dimensions of the moderating variable considered.

Testing the Motivation-Hygiene Theory

In analyzing that part of the questionnaire concerned with Herzberg's two-factor theory the following procedure was followed:

1. The different job factors were dichotomized into job content centered and job context centered as follows:

a. Job content factors include:

recognition for achievement I get
importance of my job
possibilities for advancement and growth
responsibility
authority and decision-making power
possibilities for task achievement
challenges to my abilities

b. Job context factors include:

working conditions
salary
relationships with peers
security of my job
relationships with my subordinates
relationships with my superiors
fringe benefits
supervision

2. A chi square test of independence was performed on the frequencies of each of the above factors being checked as satisfying or dissatisfying. This was meant to provide a test of Herzberg's hypothesis that factors leading to job satisfaction are separate from and not merely the opposite of factors leading to job dissatisfaction.

3. Relationships between type of motivation (positive vs. negative) and job characteristic (content vs. context) were tested by applying a chi square test to the frequencies of each factor in the two categories above being checked as a source of satisfaction or dissatisfaction.

CHAPTER IV

RESULTS OF DATA ANALYSIS

The Sample as a Whole

Early research on managerial motivation looked at managers as a homogeneous class as far as their needs and desires to be obtained from work are concerned (Rosen and Weaver, 1960). However, later research studies revealed that differences do exist between managers' perceptions of needs and need satisfaction according to their positions on various task and organizational variables (Porter, 1961). More recently, the effects of certain personal characteristics of managers have been suggested as moderators of the relationships between their perceptions of needs and need satisfaction on the one hand and task and organizational variables on the other hand. Moreover, it is also recognized that certain interaction effects exist among organizational variables as they relate to managerial motivation.

It is the purpose of this chapter to present the results of data analysis pertaining to the above topics. Accordingly, results will be presented in the following order: First, we will look at the sample as a whole regardless of the variations in the subjects' positions on the organizational variables studied. Second, the effects of the organizational variables will be considered by looking at the relationships between each variable and the dependent variables. Third, results pertaining to the interaction effects among the organizational variables

will be discussed. Fourth, the moderating effects of managers' personal characteristics will be presented. Finally, the results of data analysis concerning Herzberg's two-factor theory will be reported. Results reflect the perceptions of those who responded to the questionnaire and no assumptions are made here about the nonrespondents.

Managers' Perceptions of Need Fulfillment Deficiencies

As outlined in the last chapter, the degree of perceived deficiency in need fulfillment for each respondent was obtained by subtracting the answer to part b of each questionnaire item ("In your present position in your company, to what extent does this characteristic exist?") from part c of the item ("How much of the characteristic do you think should be connected with your present position?"). The assumption was made that the larger the difference--(b) subtracted from (c)--the larger the degree of perceived deficiency in need fulfillment.

Table 4-1 presents the mean need fulfillment deficiencies for each of the 15 items in the questionnaire for the sample as a whole. (The BMD01D computer program was used to calculate these means.)

Table 4-1 shows that managers perceive the greatest deficiencies in the self-actualization need area followed by the needs for information and autonomy. On the other hand, managers perceive the least deficiencies in the esteem, pay, social, and security need categories. This pattern shows that the greatest deficiencies occur in the higher-order needs--the needs for self-realization, growth, and independence--and the least deficiencies occur in the lower-order needs--needs for safety and survival--which is consistent with Maslow's (1954) conceptualization of human motivation.

TABLE 4-1
 MEAN NEED FULFILLMENT DEFICIENCIES FOR THE
 SAMPLE AS A WHOLE
 (N = 425)

Need Category	Item	Mean	Deficiency Rank Order for Categories
Security	I-1	1.3	
Category average		1.3	7
Social	II-1	1.4	
	II-2	1.6	
Category average		1.5	6
Esteem	III-1	1.7	
	III-2	1.6	
	III-3	1.5	
Category average		1.6	4
Autonomy	IV-1	1.7	
	IV-2	1.6	
	IV-3	1.8	
	IV-4	1.7	
Category average		1.7	3
Self-actualization	V-1	1.9	
	V-2	1.8	
	V-3	1.9	
Category average		1.9	1
Pay		1.5	5
Information		1.8	2

Managers' Perception of Need Fulfillment

Table 4-2 presents data concerning how managers perceive the actual level of need fulfillment they obtain in their management positions.

From Table 4-2 it is clear that managers perceive they obtain the greatest fulfillment in the social, security, self-actualization, and autonomy need categories. On the other hand, the least fulfilled are the pay, esteem, and information needs. When looking at the rank orders for need fulfillment deficiencies on the one hand, and need fulfillment on the other, the role of expectations can be clearly seen. Self-actualization need area ranked third in terms of actual fulfillment; however, it ranked first in terms of deficiencies. This implies that managers' expectations far exceed their actual attainment of the self-actualization needs and this shows up in the deficiency measure. This reasoning can be supported by looking at pay and esteem needs. While they are perceived to be among the least fulfilled need areas, however, they show up among the need areas producing the least fulfillment deficiencies. Again, this can be explained in terms of expectations being relatively low. Table 4-3 presents mean expected level of need fulfillment. The pattern revealed in that table supports our argument regarding the role of expectations.

TABLE 4-2
 MEAN NEED FULFILLMENT FOR THE
 SAMPLE AS A WHOLE
 (N = 425)

Need Category	Item	Mean	Fulfillment Rank Order for Categories
Security	I-1	5.3	
Category average		5.3	2
Social	II-1	5.4	
	II-2	5.5	
Category average		5.5	1
Esteem	III-1	4.6	
	III-2	4.8	
	III-3	4.9	
Category average		4.8	6
Autonomy	IV-1	4.8	
	IV-2	5.1	
	IV-3	5.0	
	IV-4	4.9	
Category average		5.0	4
Self-actualization	V-1	5.1	
	V-2	5.0	
	V-3	5.1	
Category average		5.1	3
Pay		4.9	5
Information		4.7	7

TABLE 4-3
 MEAN EXPECTED NEED FULFILLMENT FOR THE
 SAMPLE AS A WHOLE
 (N = 425)

Need Category	Item	Mean	Expectancy Rank Order for Categories
Security	I-1	5.3	
Category average		5.3	7
Social	II-1	6.0	
	II-2	4.7	
Category average		5.4	6
Esteem	III-1	5.5	
	III-2	5.5	
	III-3	5.3	
Category average		5.5	5
Autonomy	IV-1	5.7	
	IV-2	6.0	
	IV-3	6.0	
	IV-4	5.6	
Category average		5.8	3
Self-actualization	V-1	6.3	
	V-2	6.1	
	V-3	6.3	
Category average		6.2	1
Pay		5.7	4
Information		5.9	2

Managers' Perceptions of Need Importance

Need importance was measured by eliciting the respondents' answer to the question ("How important is this characteristic to you?"). Table 4-4 presents the mean importance for each of the 15 questionnaire items.

Table 4-4 indicates that need categories that are perceived to be highly fulfilled relative to the respondents' expectations are perceived to be of little importance (esteem, security, and social need categories). On the other hand, self-actualization, information, and autonomy need categories are perceived to be highly important since their relative levels of fulfillment are well below expectations. Relatively great importance is attached to pay since expectations exceed actual fulfillment, and due to the fact that it permeates almost all other need categories, i.e., money is recognized to contribute to feelings of security, esteem, and self-actualization for example.

Managers' Perceptions of the Possibility of Need Fulfillment

Maslow (1954) suggested that possibility of need fulfillment is an important factor in explaining the nature of human motivation. In this study, possibility of need fulfillment was measured by asking the respondent to indicate on a scale going from 10% to 100% the chances he perceives that he will be able to get the amount of need fulfillment he thinks should exist in his management position. Table 4-5 presents the mean perceived possibility of need fulfillment for each of the 15 questionnaire items.

It is clear from Table 4-5 that the lower-order needs (security, social, and esteem) are perceived as the most probable to be fulfilled up to the expected levels. Higher-order needs on the other hand, are perceived to be relatively less attainable.

TABLE 4-4
 MEAN PERCEIVED NEED IMPORTANCE FOR THE
 SAMPLE AS A WHOLE
 (N = 425)

Need Category	Item	Mean	Importance Rank Order for Categories
Security	I-1	5.2	
Category average		5.2	6
Social	II-1	5.8	
	II-2	4.4	
Category average		5.1	7
Esteem	III-1	5.2	
	III-2	5.5	
	III-3	5.1	
Category average		5.3	5
Autonomy	IV-1	5.4	
	IV-2	5.9	
	IV-3	5.8	
	IV-4	5.5	
Category average		5.6	4
Self-actualization	V-1	6.2	
	V-2	6.1	
	V-3	6.3	
Category average		6.2	1
Pay		5.7	3
Information		5.8	2

TABLE 4-5
 MEAN PERCEIVED POSSIBILITY OF NEED FULFILLMENT
 FOR THE SAMPLE AS A WHOLE
 (N = 425)

Need Category	Item	Mean	Possibility Rank Order for Categories
Security	I-1	86.8	
Category average		86.8	1
Social	II-1	85.3	
	II-2	81.1	
Category average		83.2	2
Esteem	III-1	80.6	
	III-2	86.0	
	III-3	81.1	
Category average		82.5	3
Autonomy	IV-1	77.3	
	IV-2	78.8	
	IV-3	76.1	
	IV-4	79.7	
Category average		78.0	6
Self-actualization	V-1	80.4	
	V-2	81.2	
	V-3	75.3	
Category average		79.0	4
Pay		78.5	5
Information		76.5	7

The Interrelationships Between Measures of Managerial Motivation

The discrepancy model discussed in the last chapter as well as the results of the data analysis presented so far point at a degree of interrelationship between managers' perceptions of need fulfillment, need fulfillment deficiencies, need importance, and possibility of need attainment. To test the significance of such interrelationship, a chi square test was applied to the rank orders of the various need categories reported above. The test resulted in a $\chi^2 = 24.3$ which with 18 degrees of freedom is significant at the .20 level of significance. This suggests that it is inadequate to look at any of the above perceptions separate from the others; rather, for a better understanding of managerial motivation, managers' perceptions of needs and need satisfaction should be viewed as interacting inputs producing a composite output.

Summary

Managers perceive the lower-order needs to be highly fulfilled relative to expectations, hence producing the least deficiencies and claiming relatively little importance. Moreover, the lower-order needs are perceived to be highly attainable. On the other hand, higher-order needs produce the greatest deficiencies in fulfillment since their expected levels of fulfillment exceed perceived actual fulfillment. Consequently, respondents attach more importance to self-actualization, autonomy, and information than they do to the lower-order needs. However, their perceptions of the possibility of attaining the expected levels of fulfillment of the higher-order need categories are considerably lower than those for the lower-order need categories.

The Impact of Organizational Variables

Looking at the sample as a whole does not provide a complete explanation of the phenomenon of managerial motivation. The notion that management can be viewed as a homogeneous class as far as motivation is concerned has been refuted by research findings revealing the individual differences in managers' perceptions of needs and need satisfaction depending on their positions on various task and organizational variables.

It is the purpose of this section to report the results of data analysis concerning the relationships between the measures of managerial motivation (dependent variables) and the organizational variables studied (the independent variables).

The Impact of Job Level

The hypotheses to be tested were that higher-level managers tend to perceive less need fulfillment deficiencies, more need fulfillment, and greater possibilities for need achievement than lower-level managers. Moreover, higher-level managers were expected to attach more importance to higher-order needs than lower-level managers who tend to place more importance to lower-order needs.

Results of data analysis pertaining to the above hypotheses are presented in Table 4-6 from which it is clear that:

1. Mean need fulfillment deficiencies tend to increase at each successive lower level of the management hierarchy. The largest deficiencies are found in the higher-order needs--autonomy, self-actualization, and information. To test the significance of the above relationship between job level and perceived need fulfillment deficiencies, a Kruskal-Wallis one-way analysis of variance by ranks was applied to the

means reported in Table 4-6 that produced an $H = 1.67$ which fails to reach the .05 level of significance (approaches the .30 level).

While unable to support our hypothesis regarding the relationship between job level and need fulfillment deficiencies, there appears to be a trend for deficiencies in need fulfillment to increase as we go from higher- to lower-level managers.

2. As predicted, need fulfillment for almost all items tends to decrease at each successive lower level of managers. Top managers get considerably more fulfillment of the autonomy, self-actualization, pay, and information needs than do lower-level managers. This relationship proved to be highly significant since the Kruskal-Wallis test produced an $H = 17.12$ which for two degrees of freedom is significant at the .001 level.

3. Mean perceived possibility of need fulfillment tends to decrease at each successive lower level of management for most of the need items. This relationship is significant at the .05 level.

4. No significant differences exist between managers at the three different levels in their perceptions of need importance.

TABLE 4-6

MEAN NEED FULFILLMENT DEFICIENCIES, NEED FULFILLMENT,
NEED IMPORTANCE, AND POSSIBILITY OF
NEED FULFILLMENT FOR EACH NEED ITEM
(Three Management Levels)

Need Category and Item		Fulfillment Deficiencies			Need Fulfillment			Need Importance			Possibility of Fulfillment		
		Job Level			Job Level			Job Level			Job Level		
		1*	2**	3***	1	2	3	1	2	3	1	2	3
Security	1	1.5	1.8	1.9	5.3	5.2	5.3	5.1	5.2	4.8	82.0	89.8	85.7
Social	1	1.5	1.4	1.4	5.5	5.4	5.1	5.9	5.8	5.7	85.4	85.9	80.0
	2	1.5	1.6	1.4	4.6	4.5	4.5	4.6	4.4	3.9	82.3	80.7	81.8
Esteem	1	1.6	1.7	1.6	4.9	4.6	4.5	5.2	5.2	4.8	90.5	79.0	75.9
	2	1.2	1.6	1.5	4.9	4.8	4.5	5.0	5.3	5.0	90.9	84.6	91.1
	3	1.4	1.5	1.6	5.0	4.9	4.8	5.1	5.1	5.1	81.0	81.9	77.8
Autonomy	1	1.7	1.8	1.8	5.2	4.8	4.3	5.4	5.4	5.1	89.5	75.7	67.1
	2	1.6	1.7	1.8	5.5	5.1	4.9	6.2	5.9	5.7	79.3	78.6	87.3
	3	1.8	1.9	2.4	5.3	5.0	4.3	6.0	5.7	5.5	78.8	76.7	68.7
	4	1.7	1.8	1.9	5.0	4.9	4.8	5.5	5.5	5.3	83.0	79.6	75.9
Self- actuali- zation	1	1.8	1.9	1.9	5.3	5.1	4.8	6.1	6.2	6.0	87.4	78.7	90.2
	2	1.8	1.9	1.7	5.3	5.0	4.6	6.2	6.1	5.7	76.2	83.5	83.9
	3	1.8	1.9	2.1	5.2	5.1	4.8	6.3	6.4	6.1	77.3	76.1	67.8
Pay		1.5	1.9	1.5	5.1	4.9	4.6	5.6	6.2	5.6	87.1	77.8	70.0
Information		1.7	1.1	2.1	5.0	4.8	4.5	5.7	5.7	5.5	83.8	76.5	68.4
p		.30			.001			.30			.05		

* Top managers (N = 83)

** Middle managers (N = 260)

*** Lower middle managers (N = 82)

The Impact of Role-Set Diversity

The research hypotheses regarding the nature of the relationship between role-set diversity and measures of managerial motivation were that managers in less diversified role-sets tend to perceive less need fulfillment deficiencies, more need fulfillment, and greater possibilities for need fulfillment than managers in more diversified role-sets. It was also hypothesized that managers in the more diversified role-sets tend to attach more importance to security, social, and esteem needs than managers having less diversified role-sets. Table 4-7 presents the results of data analysis regarding the above hypotheses. The following conclusions can be made:

1. Role-set diversity appears to be significantly related to perceived need fulfillment deficiencies (Kruskal-Wallis $H = 5.29$ with two degrees of freedom is significant beyond the .10 level). However, the direction of the relationship is the reverse of that predicted above. Managers in the highly diversified role-sets perceive less need fulfillment deficiencies than managers in less diversified role-sets. The more diversified role-sets produce less need fulfillment deficiencies in the areas of self-actualization, information, and autonomy.

2. Highly diversified role-sets produce significantly more need fulfillment in 13 need items (Kruskal-Wallis $H = 10.61$ with two degrees of freedom is significant beyond the .01 level).

3. Managers in the different role-sets appear to perceive the importance of need items in about the same way.

4. Managers in highly diversified role-sets tend to perceive greater possibilities for need fulfillment than managers in the less diversified

role-sets do. This relationship between role-set diversity and perceived possibility of need fulfillment approaches statistical significance with $p = .10$. The greatest differences between the three types of role-set are found in three items within the autonomy need area (the authority connected with my management position, the opportunity for participation in the setting of goals, and the opportunity for participation in the determination of methods and procedures), one item in the self-actualization need area (the feeling of worthwhile accomplishment), and in one item in the esteem need area (the prestige of my management position outside the company). On the other hand, managers in the less diversified role-sets perceive greater possibilities for fulfillment of their security needs than do those in the more diversified role-sets.

TABLE 4-7

MEAN NEED FULFILLMENT DEFICIENCIES, NEED FULFILLMENT,
NEED IMPORTANCE, AND POSSIBILITY OF
NEED FULFILLMENT FOR EACH NEED ITEM
(Three Types of Role-set)

Need Category and Item		Fulfillment Deficiencies			Need Fulfillment			Need Importance			Possibility of Fulfillment		
		Role-set			Role-set			Role-set			Role-set		
		1*	2**	3***	1	2	3	1	2	3	1	2	3
Security	1	1.6	1.9	2.0	5.2	5.3	5.3	5.2	5.0	5.4	91.1	86.8	79.2
Social	1	1.6	1.4	1.4	5.3	5.4	5.6	5.8	5.8	6.0	89.4	82.1	86.6
	2	1.1	1.4	1.6	4.5	4.6	4.7	4.4	4.3	4.6	82.6	80.2	80.5
Esteem	1	1.8	1.6	1.7	4.5	4.7	4.9	5.1	5.2	5.3	78.9	78.4	88.9
	2	1.6	1.5	1.7	4.8	4.8	5.0	5.3	5.1	5.4	85.4	83.0	94.4
	3	1.6	1.5	1.3	4.7	4.9	5.2	4.9	5.1	5.2	79.9	80.7	84.4
Autonomy	1	1.8	1.7	1.6	4.6	4.8	5.1	5.4	5.5	5.5	72.4	73.9	94.4
	2	1.7	1.7	1.6	5.1	5.1	5.4	5.8	6.0	6.0	78.9	78.2	80.1
	3	1.9	1.9	1.6	4.7	5.0	5.4	5.6	5.8	5.9	73.5	75.7	81.4
	4	1.9	1.8	1.5	4.7	5.0	5.2	5.2	5.5	5.7	77.5	80.0	82.9
Self- actuali- zation	1	2.1	1.9	1.8	5.1	5.1	5.3	6.1	6.1	6.4	80.2	77.2	89.2
	2	2.1	1.9	1.4	4.8	4.9	5.3	6.1	6.1	6.1	82.0	82.5	76.6
	3	2.1	1.9	1.5	4.9	5.1	5.4	6.3	6.4	6.3	73.7	74.3	80.7
Pay		1.7	1.5	1.5	4.9	4.9	4.8	5.6	5.7	5.9	79.3	78.4	77.6
Information		2.0	1.8	1.6	4.7	4.7	5.0	5.7	5.7	6.0	74.3	78.4	75.6
p		.10			.01			.50			.10		

*Low diversification (N = 138)

**Medium diversification (N = 205)

***High diversification (N = 82)

The Impact of Line versus Staff Type of Job

Line managers were predicted to perceive less need fulfillment deficiencies, more need fulfillment, and greater possibilities for need fulfillment than staff managers do. On the other hand, line managers were expected to attach more importance to autonomy needs while staff managers were predicted to place more importance on social and esteem needs. From Table 4-8 the following conclusions can be derived:

1. Line managers perceive less need fulfillment deficiencies in 10 need items than both staff and combined line/staff managers do. Combined line/staff managers tend to fall between the basically line and the basically staff managers as far as need fulfillment deficiencies are concerned. The observed differences, however, do not prove to be statistically significant ($H = 3.44$ which with two degrees of freedom is significant at the .20 level of significance). This supports Porter's (1963 b) finding that differences between line and staff managers' perceptions of need fulfillment deficiencies are smaller than differences between different managerial levels.

2. Line managers perceive significantly more need fulfillment in 9 need items than staff managers do. Combined line/staff managers tend to fall between the other two categories in terms of need fulfillment. Line managers report considerably more fulfillment of the feeling of self-esteem, the opportunity for independent thought and action, the opportunity for participation in the setting of goals, and the opportunity for personal growth and development. On the other hand, staff managers get more fulfillment of the opportunity to give help to others, the opportunity to develop close friendships, and pay. The three types of managers are about equal in the fulfillment they get of information and security needs.

3. Line managers perceive greater possibilities for need fulfillment than the other two types do. Combined line/staff managers fall between the basically line and the basically staff managers in terms of perceived possibilities for need fulfillment. Line managers perceive greater possibilities for fulfillment of the security, esteem, autonomy, self-actualization, and pay needs. Staff and combined line/staff managers perceive greater possibilities for fulfillment of social, and information needs than line managers do. Lower-order needs are perceived to be more attainable by the three types of managers than the higher-order needs.

4. Line versus staff type of job does not have a significant impact on managers' perceptions of need importance.

TABLE 4-8

MEAN NEED FULFILLMENT DEFICIENCIES, NEED FULFILLMENT,
NEED IMPORTANCE, AND POSSIBILITY OF
NEED FULFILLMENT FOR EACH NEED ITEM
(Three types of managerial job, Line, Staff, and combined Line/Staff)

Need Category and Item	Fulfillment Deficiencies			Need Fulfillment			Need Importance			Possibility of Fulfillment		
	Type of Job			Type of Job			Type of Job			Type of Job		
	1*	2**	3***	1	2	3	1	2	3	1	2	3
Security	1 1.7	1.7	2.0	5.3	5.2	5.3	5.0	5.1	5.2	95.5	88.1	79.6
Social	1 1.5	1.5	1.5	5.4	5.2	5.5	5.9	5.8	5.8	83.8	82.2	89.0
	2 1.4	1.5	1.8	4.5	4.7	4.9	4.3	4.5	4.4	79.3	83.8	80.2
Esteem	1 1.6	2.0	1.6	4.8	4.4	4.7	5.2	5.1	5.2	78.8	76.5	85.1
	2 1.5	1.8	1.6	4.9	4.5	4.9	5.2	5.3	5.2	92.7	80.4	84.8
	3 1.4	1.7	1.6	5.0	4.8	4.9	5.1	5.0	5.0	82.4	81.1	80.3
Autonomy	1 1.6	1.9	1.7	5.0	4.3	5.0	5.5	5.1	5.4	77.6	68.0	84.2
	2 1.5	1.8	1.7	5.2	5.0	5.1	6.0	5.8	5.9	86.0	75.4	75.5
	3 1.8	1.9	1.8	5.3	4.6	5.0	6.0	5.6	5.7	77.6	73.0	77.1
	4 1.7	1.8	1.8	5.0	4.7	5.0	5.4	5.4	5.6	83.3	76.3	79.3
Self- actuali- zation	1 1.8	1.9	1.9	5.2	5.0	5.1	6.3	6.1	6.2	86.6	73.6	80.5
	2 1.7	2.0	1.8	5.0	4.7	5.1	6.1	6.1	6.1	92.2	77.0	75.3
	3 1.8	2.0	1.8	5.2	4.7	5.2	6.3	6.4	6.3	74.5	72.1	78.5
Pay	1.7	1.4	1.6	4.9	4.9	4.9	5.7	5.6	5.7	81.1	78.4	76.5
Information	1.7	1.8	1.8	4.7	4.7	4.8	5.7	5.7	5.9	77.4	73.6	78.2
p		.20			.02			.90			.02	

*Basically line (N = 106)

**Basically staff (N = 92)

***Combined line/staff (N = 133)

The Impact of Total Company Size

Earlier research on the impact of total company size on managers' perceptions of needs and need satisfaction failed to provide conclusive results. Porter (1963 c, p. 389) stated that

There are no trends in any of the five need areas for smaller sized companies to have either larger or smaller perceived deficiencies in need fulfillment than larger sized companies.

However, when the variable of job level was introduced it was clear that total size has some relation to perceived need fulfillment deficiencies. The results of data analysis pertaining to the effects of total company size on measures of managerial motivation employed in this study are presented in Table 4-9 from which it is clear that:

1. Smaller sized companies (1-499) produce more need fulfillment than both medium and large sized companies. The relationship between company size and need fulfillment proves to be significant at the .01 level ($H = 9.83$ with two degrees of freedom).
2. Medium sized companies (500-4999) produce the least need fulfillment.
3. Total company size has little relationship to perceived need importance. Managers in the three categories of company size tend to perceive the importance of the various need items in much the same manner.
4. Smaller sized companies produce greater possibilities for need fulfillment than both medium and large sized companies.
5. Total company size does not appear to be significantly related to managers' perceptions of need fulfillment deficiencies.

TABLE 4-9

MEAN NEED FULFILLMENT DEFICIENCIES, NEED FULFILLMENT,
NEED IMPORTANCE, AND POSSIBILITY OF
NEED FULFILLMENT FOR EACH NEED ITEM
(Three Company Size Categories)

Need Category and Item		Fulfillment Deficiencies			Need Fulfillment			Need Importance			Possibility of Fulfillment		
		Total Size			Total Size			Total Size			Total Size		
		1*	2**	3***	1	2	3	1	2	3	1	2	3
Security	1	2.1	1.7	1.6	5.4	5.2	5.2	5.4	5.1	4.9	83.3	83.4	94.6
Social	1	1.4	1.5	1.4	6.6	5.3	5.4	6.0	5.7	5.8	85.2	82.2	89.3
	2	1.4	1.5	1.9	4.5	4.5	4.6	4.6	4.2	4.4	83.8	79.1	79.1
Esteem	1	1.5	1.7	1.8	4.9	4.5	4.5	5.3	5.2	5.0	90.1	83.4	85.0
	2	1.6	1.7	1.5	5.0	4.8	4.6	5.2	5.3	5.1	80.4	80.6	82.5
	3	1.4	1.6	1.5	5.0	4.8	4.8	5.2	5.1	4.8	83.5	74.5	74.5
Autonomy	1	1.7	1.8	1.6	5.2	4.6	4.6	5.5	5.3	5.3	79.1	78.0	79.6
	2	1.7	1.6	1.7	5.3	5.1	4.9	6.0	6.0	5.8	76.4	76.1	75.7
	3	1.7	2.0	1.7	5.1	4.8	4.9	5.9	5.7	5.7	76.4	76.3	80.4
	4	1.7	1.8	1.7	5.1	4.9	4.8	5.7	5.4	5.3	80.6	80.3	82.4
Self- actuali- zation	1	1.8	1.9	1.9	5.4	5.0	5.1	6.2	6.1	6.2	86.0	76.4	79.8
	2	1.7	1.8	1.9	5.3	4.8	4.8	6.2	6.0	6.1	78.3	79.0	87.0
	3	1.9	1.9	1.8	5.3	4.9	5.0	6.4	6.3	6.3	80.4	72.8	73.3
Pay		1.8	1.7	1.8	4.8	4.7	4.7	5.8	5.8	5.7	79.0	76.1	74.5
Information		1.8	1.7	1.8	4.8	4.7	4.7	5.8	5.8	5.7	79.0	76.1	74.5
p		.70			.01			.70			.20		

*Small size (N = 134)

**Medium size (N = 164)

***Large size (N = 127)

The Impact of Organization Structure

Earlier research on the impact of organization structure on managers' perceptions of need fulfillment deficiencies (Porter and Lawler, 1964 and Porter and Siegel, 1965) found no over-all superiority of flat over tall organization structures in producing less need fulfillment deficiencies. However, as Table 4-10 indicates, it is possible to make the following conclusions:

1. Intermediate structures produce the least need fulfillment deficiencies, while flat structures produce the greatest deficiencies and tall structures are in the middle. Security, information, and self-actualization need areas produce the greatest deficiencies in both flat and intermediate structures, while in taller structures it is the self-actualization, information, and autonomy needs that produce the most deficiencies. Despite the fact that the Kruskal-Wallis test applied on mean need fulfillment deficiencies for the types of structure proved the relationship to be statistically nonsignificant at the .05 level ($H = 2.97$ with two degrees of freedom), however, the trend for need fulfillment deficiencies to decrease when going from flat to intermediate structures then to increase when going from intermediate to tall structures is apparent.

This finding seems to reconcile two divergent views regarding the effect of organization structure on job attitudes. On the one hand, flat organization structures have been claimed to produce more effective supervision, and greater individual responsibility and initiative among employees (Worthy, 1950). On the other hand, traditional organization theorists (e.g., Griacunas, 1937) argues that a tall organization is more conducive to better performance and improved attitudes through close

supervision and the complete understanding between superiors and subordinates. Each of the above two propositions has its merits and our finding points to the possibility of some sort of optimum size/number of levels combination (intermediate structure) that tends to produce the least need fulfillment deficiencies. When moving away from that intermediate structure, in either direction (flatter or taller), this optimum combination will go out of balance and this will be reflected in more perceived need fulfillment deficiencies.

2. Tall and flat structures are about equal in the level of need fulfillment they produce. Tall organization structures produce more fulfillment of the need to give help to others, the feeling of self-esteem, the prestige inside the company, the authority connected with the position, the opportunity to participate in the determination of methods and procedures, the self-actualization needs, and pay. On the other hand, flat structures provide more fulfillment of the security, friendships, prestige outside the company, the opportunity for independent thought and action, and the information needs. Intermediate structures produce less need fulfillment than the other two types of structure.

3. Flat structures provide the greatest possibilities for need fulfillment, followed by intermediate and tall structures respectively.

4. Organization structure does not appear to have any significant effect on managers' perceptions of need importance.

The above results point to the fact that there is no over-all superiority of one type of structure over the others in their relationships to the different dependent variables studied. Rather, each type of structure relates differently to managers' perceptions of needs and need satisfactions.

TABLE 4-10

MEAN NEED FULFILLMENT DEFICIENCIES, NEED FULFILLMENT,
NEED IMPORTANCE, AND POSSIBILITY OF
NEED FULFILLMENT FOR EACH NEED ITEM
(Three Types of Organization Structure)

Need Category and Item		Fulfillment Deficiencies			Need Fulfillment			Need Importance			Possibility of Fulfillment		
		Structure			Structure			Structure			Structure		
		1*	2**	3***	1	2	3	1	2	3	1	2	3
Security	1	2.0	1.8	1.7	5.5	5.2	5.5	5.0	5.1	5.4	84.1	86.9	88.3
Social	1	1.6	1.4	1.5	5.2	5.4	5.5	6.0	5.8	5.9	81.5	84.4	90.1
	2	1.5	1.5	1.7	4.8	4.5	4.4	4.7	4.2	4.6	84.0	80.8	79.7
Esteem	1	1.8	1.7	1.6	4.4	4.6	4.9	4.8	5.2	5.3	91.5	78.5	78.7
	2	1.8	1.6	1.4	4.7	4.9	5.0	5.1	5.2	5.3	91.6	87.0	79.6
	3	1.4	1.6	1.4	5.1	4.8	4.9	5.0	5.1	5.0	84.3	81.7	77.5
Autonomy	1	2.0	1.6	1.7	4.7	4.7	5.1	5.4	5.3	5.3	87.2	75.2	76.0
	2	1.6	1.6	1.7	5.3	5.1	5.0	6.1	5.9	5.8	77.0	82.4	70.5
	3	1.9	1.8	2.0	5.2	4.9	4.9	6.0	5.8	5.7	80.7	76.5	72.3
	4	2.0	1.6	1.8	4.9	4.9	4.9	5.7	5.4	5.5	79.6	81.4	75.4
Self- actuali- zation	1	2.2	1.8	1.8	5.0	5.0	5.5	6.2	6.1	6.3	86.2	80.3	76.9
	2	1.9	1.8	2.0	5.1	4.9	5.1	6.3	6.1	6.1	76.2	83.8	77.6
	3	1.8	1.8	2.1	5.1	5.0	5.1	6.3	6.3	6.3	77.0	75.5	73.7
Pay		1.5	1.6	1.6	4.9	4.8	5.0	5.7	5.7	5.6	77.1	78.6	78.9
Information		2.0	1.7	1.9	5.8	4.7	4.7	5.9	5.7	5.8	72.6	79.4	71.5
p		.30			.10						.05		

*Flat structure (N = 64)

**Intermediate structure (N = 260)

***Tall structure (N = 101)

The Impact of Information

Information appears to be a highly significant variable affecting managers' perceptions of needs and need satisfaction.

1. Need fulfillment deficiencies tend to increase as we move from adequately informed through sufficiently informed to inadequately informed managers. This relationship is statistically significant at the .001 level ($H = 17.59$ with two degrees of freedom). For the less informed managers, the largest deficiencies occurred in the security and self-actualization need areas.

2. Need fulfillment significantly increases at each successive higher level of information (significant at the .001 level). For almost all need items, managers receiving adequate job-related information perceive greater amounts of need fulfillment than the less informed managers. Sufficiently informed managers tend to be in the middle between the adequately and the inadequately informed managers.

3. Adequately informed managers tend to perceive greater possibilities for need fulfillment than the less informed managers in almost all need items. However, managers receiving inadequate job-related information perceive substantially greater possibilities for fulfillment of security needs which can be interpreted to mean that the less the flow of information coming to the manager, the less his exposure to others' expectations and demands will be, hence the more his feelings of security.

4. Managers' perceptions of need importance do not appear to be significantly affected by job-related information.

Table 4-11 presents the means of the four dependent variables discussed above as a function of job-related information.

TABLE 4-11

MEAN NEED FULFILLMENT DEFICIENCIES, NEED FULFILLMENT,
NEED IMPORTANCE, AND POSSIBILITY OF
NEED FULFILLMENT FOR EACH NEED ITEM
(as functions of Job-Related information)

Need Category and Item	Fulfillment Deficiencies			Need Fulfillment			Need Importance			Possibility of Fulfillment		
	Information			Information			Information			Information		
	1*	2**	3***	1	2	3	1	2	3	1	2	3
Security	1 1.8	1.8	2.2	5.4	5.1	5.1	5.3	5.0	4.9	88.2	82.0	104.4
Social	1 1.4	1.5	1.6	5.6	5.2	5.1	5.9	5.8	6.0	90.6	81.0	78.5
	2 1.4	1.7	1.9	4.7	4.4	4.4	4.4	4.3	4.4	84.6	79.4	70.5
Esteem	1 1.7	1.6	2.1	4.8	4.6	4.2	5.2	5.2	5.2	85.2	77.6	71.3
	2 1.5	1.6	2.1	5.0	4.7	4.5	5.2	5.2	5.2	91.0	80.8	85.5
	3 1.5	1.6	1.5	5.0	4.8	4.8	5.0	5.1	5.1	84.2	78.4	78.6
Autonomy	1 1.7	1.7	2.1	4.9	4.8	4.2	5.3	5.4	5.2	82.2	74.5	65.9
	2 1.6	1.7	1.8	5.2	5.0	5.0	5.9	5.9	6.0	80.1	76.0	86.0
	3 1.6	2.1	2.0	5.2	4.8	4.6	5.7	5.8	5.9	82.2	70.9	70.8
	4 1.7	1.8	1.9	5.1	4.8	4.2	5.5	5.5	5.3	83.8	77.5	69.7
Self- actuali- zation	1 1.8	1.9	2.1	5.3	4.9	5.0	6.2	6.2	6.4	84.8	77.0	74.9
	2 1.7	1.8	2.3	5.2	4.8	4.7	6.0	6.2	6.1	83.5	77.1	90.3
	3 1.8	1.9	2.2	5.2	5.0	4.6	6.3	6.4	6.4	77.7	73.9	69.7
Pay	1.5	1.6	1.9	4.9	4.8	4.8	5.7	5.7	5.9	80.3	78.0	71.7
p		.001			.001						.001	

* Adequately informed (N = 198)

** Sufficiently informed (N = 190)

*** Inadequately informed (N = 37)

The Impact of Subunit Size

Based upon our review of the literature on the relationships between subunit size and job attitudes, it was hypothesized that managers in small sized subunits are likely to perceive less need fulfillment deficiencies, more need fulfillment, and greater possibilities for need fulfillment than managers in larger sized subunits. As Table 4-12 indicates, the following conclusions as to the effect of subunit size can be made:

1. Mean need fulfillment deficiencies appears to increase when moving from larger to smaller sized subunits. Small subunits (1-49) produce the largest deficiencies, and large subunits (200 or more) produce the least deficiencies, while medium subunits fit between them. This relationship approaches statistical significance ($H = 4.20$ which for two degrees of freedom is significant at the .10 level).
2. Managers in the different sized subunits do not significantly differ in their perceptions of need fulfillment.
3. Managers in the three categories of subunit size view the importance of the various need items in much the same way.

The above results are consistent with and tend to confirm the findings about the relationships between role-set diversification and perceptions of needs and need satisfaction. Managers seem to derive more satisfaction, and perceive greater possibilities for need fulfillment in larger subunits and more diversified role-sets. While this contradicts most of the previous research findings on subunit size as related to job attitudes, however the fact remains that almost all such research had as subjects blue-collar workers rather than managers.

TABLE 4-12

MEAN NEED FULFILLMENT DEFICIENCIES, NEED FULFILLMENT,
NEED IMPORTANCE, AND POSSIBILITY OF
NEED FULFILLMENT FOR EACH NEED ITEM
(as functions of Subunit size)

Need Category and Item		Fulfillment Deficiencies			Need Fulfillment			Need Importance			Possibility of Fulfillment		
		Subunit size			Subunit size			Subunit size			Subunit size		
		1*	2**	3***	1	2	3	1	2	3	1	2	3
Security	1	1.8	2.1	1.6	5.3	5.1	5.2	5.2	5.1	5.1	82.9	90.5	89.8
Social	1	1.5	1.4	1.4	5.3	5.5	5.3	5.9	5.8	5.8	86.7	84.0	84.0
	2	1.5	1.5	1.5	4.6	4.5	4.5	4.5	4.3	4.2	81.4	79.9	81.0
Esteem	1	1.8	1.6	1.5	4.6	4.5	4.8	5.2	5.0	5.2	83.1	76.3	81.4
	2	1.8	1.6	1.4	4.7	4.8	5.1	5.3	5.2	5.1	82.5	86.9	91.6
	3	1.5	1.6	1.4	4.9	4.9	4.9	5.1	5.0	5.0	80.7	80.4	82.8
Autonomy	1	1.8	1.8	1.5	4.7	4.5	4.9	5.3	5.3	5.5	79.6	74.6	76.3
	2	1.7	1.6	1.5	5.1	5.2	5.1	6.0	5.9	5.9	76.0	81.0	80.7
	3	2.0	1.5	1.9	4.8	5.1	5.1	5.7	5.7	5.8	74.4	76.5	78.4
	4	1.8	1.7	1.7	4.8	5.1	5.0	5.4	5.5	5.5	76.6	78.7	85.5
Self- actuali- zation	1	1.8	1.9	1.9	5.0	5.2	5.3	6.2	6.2	6.1	78.3	82.7	82.3
	2	1.9	1.8	1.8	4.9	5.0	5.1	6.1	6.0	6.1	75.8	82.3	88.7
	3	2.0	1.8	1.7	5.0	5.0	5.2	6.3	6.3	6.3	74.3	74.6	78.1
Pay		1.5	1.6	1.6	4.5	4.8	4.9	5.7	5.7	5.6	76.5	75.7	84.1
Information		1.7	1.8	1.8	4.7	4.7	4.8	5.7	5.8	5.8	73.2	79.0	80.1
p			.10			.30						.05	

*Small subunit size (N = 183)

**Medium subunit size (N = 116)

***Large subunit size (N = 118)

The Impact of Organizational Location

Paine et al. (1966) reported that field managers tend to perceive more need fulfillment than office managers at the same managerial level. However, in the present study it was found that combined office/field managers perceived significantly less need fulfillment deficiencies, more need fulfillment, and greater possibilities for need fulfillment than managers in basically office and basically field positions did. The relationships between organizational location and managers' perceptions of needs and need satisfaction are statistically significant beyond the .001 level. However, one limitation that should be taken into consideration is the extremely small size of the field managers' sample ($N = 8$). Therefore, emphasis is given here to the differences between the basically office ($N = 199$) and the combined office/field managers ($N = 216$).

1. Basically office jobs produce more deficiencies, less need fulfillment, and less possibilities for need fulfillment than the combined office/field jobs. These relationships are significant at the .05 level.

2. For all three types of managers, the different need categories are ranked in about the same manner in terms of their relative importance. Table 4-13 presents the results of data analysis pertaining to the above relationships.

TABLE 4-13

MEAN NEED FULFILLMENT DEFICIENCIES, NEED FULFILLMENT,
NEED IMPORTANCE, AND POSSIBILITY OF
NEED FULFILLMENT FOR EACH NEED ITEM
(as functions of Organizational Location)

Need Category and Item		Fulfillment Deficiencies			Need Fulfillment			Need Importance			Possibility of Fulfillment		
		Location			Location			Location			Location		
		<u>1*</u>	<u>2**</u>	<u>3***</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>
Security	1	1.9	3.0	1.6	5.2	4.0	5.4	5.1	5.5	5.2	84.6	67.5	90.0
Social	1	1.5	3.0	1.4	5.4	4.8	5.4	5.9	6.1	5.7	85.6	68.7	85.8
	2	1.6	3.0	1.4	4.4	4.6	4.7	4.4	4.7	4.3	77.2	76.2	85.6
Esteem	1	1.7	2.3	1.6	4.6	3.6	4.7	5.1	5.7	5.2	81.8	56.2	80.4
	2	1.6	2.5	1.5	4.8	3.7	4.8	5.2	5.4	5.2	90.5	52.5	82.6
	3	1.5	2.3	1.5	4.9	4.1	4.9	5.2	5.5	5.2	80.2	57.5	83.2
Autonomy	1	1.7	2.3	1.6	4.8	3.5	4.8	5.4	5.0	5.3	79.0	53.7	76.8
	2	1.7	2.3	1.6	5.1	4.1	5.1	6.0	6.0	5.8	81.1	42.5	77.9
	3	1.8	1.8	1.8	5.0	4.0	4.9	5.8	5.6	5.7	76.9	47.5	76.4
	4	1.7	2.4	1.7	4.8	3.6	5.1	5.5	5.7	5.4	77.8	48.7	83.1
Self- actuali- zation	1	1.9	3.0	1.8	5.1	3.7	5.2	6.2	6.2	6.2	86.1	51.2	75.6
	2	1.7	3.2	1.8	5.0	3.3	5.0	6.1	6.3	6.1	81.0	41.2	83.1
	3	1.9	2.5	1.9	3.1	3.8	5.0	6.4	6.6	6.3	75.7	47.5	76.1
Pay		1.6	1.4	1.5	4.8	4.5	4.9	5.7	5.7	5.7	78.3	67.3	79.2
Information		1.7	3.4	1.2	4.8	3.0	4.8	5.8	6.1	5.7	75.7	41.2	79.2
p		.001			.001			.80			.001		

* Basically office (N = 199)

** Basically field (N = 8)

*** Combined office/field (N = 216)

Summary

The present section presents the results of data analysis regarding the relationships between managerial motivation and the organizational variables studied. Managers' perceptions of needs and need satisfaction have been shown to be related to the organizational variables. However, certain perceptions are more highly related to the organizational variables than other kinds of perceptions. For example, indices of need fulfillment seem to be much more strongly related to the independent variables than are indices of need importance. On the other hand, certain organizational variables seem to have stronger relationships to managerial motivation than other organizational variables. For example, role-set diversity and job level seem to have stronger relationships to the dependent variables than is the line vs. staff type of job.

The Interaction Effects Between the Organizational Variables

In the previous section we investigated the relationships between several organizational variables and managers' perceptions of needs and need satisfaction. However, more insight into the nature of such relationships can be gained by looking at the interrelationships between the organizational variables themselves as they relate to the dependent variables. To get at such interactions the means of each dependent variable were sorted on the dimensions of two organizational variables at a time (the BMD01D computer program with the category sort option developed by the Health Sciences Computing Facility, UCLA as modified by the RCC, Indiana University was used). A sign test was then applied by computing the number of changes in the size of each mean when moving along the dimensions of one organizational variable within each dimension of the second organizational variable. A chi square test was applied on the plus and minus totals of such changes to test for a significant interaction effect. In essence, what we are doing here is holding one organizational variable constant and studying the effects of variations in a second organizational variable upon the dependent variables. Tables 4-14, 4-15, and 4-16 present an example of this procedure that was followed with all other variables. Appendix III presents the data pertaining to the interaction effects reported in this section.

TABLE 4-14

MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH NEED ITEM
AS A FUNCTION OF JOB-RELATED INFORMATION AND
ORGANIZATIONAL STRUCTURE

Need Category and Item		Job-Related Information								
		Adequate			Sufficient			Inadequate		
		Structure			Structure			Structure		
		Flat	Inter- mediate	Tall	Flat	Inter- mediate	Tall	Flat	Inter- mediate	Tall
Security	1	2.4	1.7	1.4	1.6	1.7	2.1	2.0	2.4	1.7
Social	1	1.6	1.3	1.2	1.7	1.3	1.7	1.2	1.8	1.0
	2	1.4	1.5	1.4	1.6	1.5	2.0	1.0	1.7	1.6
Esteem	1	1.8	1.7	1.4	1.7	1.5	1.7	2.2	2.4	1.5
	2	2.0	1.4	1.2	1.8	1.6	1.6	1.3	2.4	1.6
	3	1.2	1.7	1.0	1.6	1.6	1.6	1.5	1.4	1.5
Autonomy	1	2.4	1.6	1.3	1.8	1.5	1.8	1.7	2.4	1.8
	2	1.7	1.6	1.3	1.6	1.5	2.0	1.5	2.1	1.5
	3	1.6	1.6	1.5	2.4	1.9	2.1	1.0	2.0	2.2
	4	1.8	1.7	1.5	2.2	1.5	2.1	2.0	2.1	1.6
Self- actuali- zation	1	2.2	1.7	1.6	2.2	1.8	1.9	2.0	2.4	1.5
	2	1.6	1.8	1.5	2.1	1.6	2.3	2.2	2.5	2.1
	3	1.7	1.8	1.8	1.8	1.8	2.2	1.7	2.3	2.1
Pay		1.3	1.6	1.3	1.6	1.5	1.7	2.0	1.9	1.8
Information		1.7	1.5	1.4	2.4	1.8	2.2	1.7	2.1	2.3

TABLE 4-15

NUMBER OF CHANGES IN SIZE OF MEAN DEFICIENCIES FROM
FLAT TO TALL ORGANIZATION STRUCTURES WITHIN
THREE LEVELS OF JOB-RELATED INFORMATION

Need Category and Item		Adequately informed			Sufficiently informed			Inadequately informed		
		+	0	-	+	0	-	+	0	-
Security	1	0	0	2	2	0	0	1	0	1
Social	1	0	0	2	1	0	1	1	0	1
	2	1	0	1	1	0	1	1	0	1
Esteem	1	0	0	2	1	0	1	1	0	1
	2	0	0	2	0	1	1	1	0	1
	3	1	0	1	0	2	0	1	0	1
Autonomy	1	0	0	2	1	0	1	1	0	1
	2	0	0	2	1	0	1	1	0	1
	3	0	1	1	1	0	1	2	0	0
	4	0	0	2	1	0	1	1	0	1
Self- actuali- zation	1	0	0	2	1	0	1	1	0	1
	2	1	0	1	1	0	1	1	0	1
	3	1	1	0	1	1	0	1	0	1
Pay		1	0	1	1	0	1	0	0	2
Information		0	0	2	1	0	1	2	0	0
Total		5	2	23	14	4	12	16	0	14

TABLE 4-16

PLUS AND MINUS TOTALS OF THE NUMBER OF CHANGES IN THE SIZE OF
MEAN DEFICIENCIES AS A FUNCTION OF JOB-RELATED INFORMATION
AND ORGANIZATION STRUCTURE

	Adequately informed	Sufficiently informed	Inadequately informed	Total
Plus Totals	5	14	16	35
Minus Totals	23	12	14	49
Total	<u>28</u>	<u>26</u>	<u>30</u>	<u>84</u>

2

$X^2 = 9.79$ which with 2 df is significant at the .01 level.

The Interaction Between Job Level and Total Size

1. At the top management level, small sized companies produce significantly more need fulfillment than larger sized companies. On the other hand, at the middle and lower middle levels, larger sized companies produce more need fulfillment than smaller sized companies. This interaction by a chi square test proves to be significant at the .001 level (chi square = 21.7 with two degrees of freedom). This finding contradicts that of Porter (1963 c) where he found a highly significant interaction effect between job level and company size but in the opposite direction of that found here. This difference between our finding and Porter's may be explained by taking into consideration the interaction effects between total size and subunit size on need fulfillment to be reported below. Large sized subunits produce more need fulfillment than smaller sized subunits within all total size categories. For a higher-level manager, a small organization may be conceived as a large subunit or a large work group (a president of a small bank for example),

hence the positive effects of subunit size will be reflected in more perceived need fulfillment than in the case of a higher-level manager in a large organization whose immediate work group may be small relative to the total organization, so the negative effects of small sized subunits will be reflected in less perceived need fulfillment. The same reasoning applies to the other two levels of management. However, our finding is still limited by the relatively small sample size of top managers from large organizations.

2. Job level and company size are significantly interrelated in their relationships to perceived possibility of need fulfillment (chi square = 19.45 with two degrees of freedom is significant at the .001 level). Larger sized organizations provide significantly less possibilities of need fulfillment for top managers. However, at the middle and lower middle management levels, small sized companies provide significantly less possibilities of need fulfillment than larger sized companies.

The Interactions Between Job Level and Structure

Tall organization structures were found in the above section to produce relatively less need fulfillment deficiencies than flat structures but more than intermediate structures. However, when the variable of job level is taken into consideration it is apparent that at top levels of management, taller structures produce significantly less need fulfillment deficiencies than both flat and intermediate structures. On the other hand, at lower levels of management (middle and lower middle), tall structures produce significantly more need fulfillment deficiencies than the other two types. This later finding could be

interpreted as supporting Worthy's (1950) notion that flatter organization structures are more conducive for higher employee morale and greater job satisfaction when taking managerial level into consideration. The greatest differences in need deficiencies between taller and flatter structures at the lower levels of management occur in the security, social, autonomy, and information areas.

The Interactions Between Job Level and Line/Staff Type of Job

The trend for line managers to get more need fulfillment does not hold up across all levels of management. At the middle level of management, staff managers tend to get more need fulfillment than line managers, while at the lower level, line managers perceive more need fulfillment than staff managers. This relationship approaches the .05 level of significance (chi square = 3.7 with one degree of freedom).

The Interactions Between Job Level and Organizational Location

At top and lower middle levels of management, those holding combined office/field jobs tend to get significantly more need fulfillment than managers in basically office jobs. However, at the middle level of management, combined office/field positions produce considerably less need fulfillment than basically office positions (significant at .001 level).

The Interactions Between Organization Structure and Subunit Size

A significant interaction effect exists between organization structure and subunit size as they relate to need fulfillment (at the .001 level). In flat and tall structures, larger sized subunits produce less need fulfillment than smaller sized subunits. However, in intermediate structures, large subunits produce considerably more need

fulfillment than the other two types of structures. Large subunits in flat and tall structures produce less need fulfillment especially in the esteem, autonomy, and security need areas. On the other hand, in intermediate structures, large subunits provide significantly more fulfillment of self-actualization, autonomy, and information.

The Interactions Between Structure and Organizational Location

Combined office/field jobs in flat and tall organization structures tend to perceive considerably less need fulfillment than managers holding basically office jobs. On the other hand, in intermediate structures, managers with combined office/field responsibilities perceive more need fulfillment than basically office managers (significant at the .01 level).

The Interactions Between Structure and Total Size

Porter and Lawler (1964) pointed at the possible interaction effects between organization structure and total company size. In the present study, structure and total size appear to be significantly interacting as they affect need fulfillment deficiencies (at the .01 level). In small organizations, flat structures produce more need fulfillment than taller structures. On the other hand, in large companies, taller structures produce more need fulfillment than flatter structures. This finding supports Porter and Lawler's as they found that in relatively small organizations a flat organization structure appears to produce more need satisfaction for managers, while in relatively large companies taller structures produce greater need satisfaction. The explanation provided by Porter and Lawler for this phenomenon is that

in a small organization problems of coordination and communication do not tend to be severe, simply because the organization is small. Thus, in a small organization there would be little advantage in a tall structure, and in fact, since it tends to amplify the disadvantages associated with tight managerial control, a tall structure probably is a liability in a typical organization. In large organizations, on the other hand, problems of coordination and communication are complex. Thus, for large organizations a taller type of structure may be needed to overcome these problems and allow managers to supervise their subordinates more effectively. (Porter and Lawler, 1965, pp.44-45.)

The Interactions Between Total Size and Subunit Size

When the variable of total size is considered simultaneously with that of subunit size, it appears that larger sized subunits tend to produce more need fulfillment than smaller sized subunits across all types of total size.

The Interactions Between Information and Organization Structure

A significant interaction effect between job-related information and organization structure appears to exist (at the .01 level). Tall structures produce significantly less deficiencies for adequately informed managers than do the other two types of structure. On the other hand, for the less informed managers, flatter organizations produce less deficiencies. For an adequately informed manager a taller structure with its emphasis on supervisory controls would be more appropriate to use his information in coordinating the activities of his subordinates. However, for the less informed manager, a flat structure with large average span of control and where subordinates have greater freedom and autonomy to make decisions, provides a means to compensate for his lack of information by delegating more of his decision-making power to his subordinates.

The Interactions Between Information and Organizational Location

More informed managers holding combined office/field positions perceive less need fulfillment deficiencies than the basically office managers who report to be equally informed. On the other hand, less informed managers in combined office/field jobs perceive more need fulfillment deficiencies than basically office managers at the same level of information (significant at the .01 level).

The Interactions Between Information and Subunit Size

Large subunits produce considerably less need fulfillment deficiencies (.001 level of significance), and more need fulfillment (.01 level of significance) for the adequately and inadequately informed managers. This may be explained in the following manner: for the adequately informed managers the above finding is consistent with the general finding regarding the impact of subunit size on managers' perceptions of needs and need satisfaction. However, for the less informed managers, a large subunit provides him with more contacts and chances to enhance his information, hence its perception as a source of need satisfaction.

The Interactions Between Role-Set Diversity and Total Size

The following interaction effects appear to exist: in the less diversified role-sets, large sized companies produce more need fulfillment deficiencies than smaller sized companies especially in the esteem, autonomy, and self-actualization need areas. In more diversified role-sets, small sized companies produce more need fulfillment deficiencies (significant at the .02 level).

The Interactions Between Role-Set and Job Level

1. In low and high diversified role-sets, lower levels of management perceive less need fulfillment deficiencies, while in the medium diversified role-sets, lower levels of management tend to perceive more deficiencies (significant at the .001 level).

2. In medium and highly diversified role-sets, lower levels of management get less need fulfillment than higher levels of management (significant at the .001 level).

Summary

Significant interaction effects exist between most of the organizational variables studied in their relationships with the dependent variables. The recognition of such interaction effects contributes to a better and broader understanding of managers' perceptions of needs and need satisfaction. Looking at the relationships between the dependent variables and one organizational variable at a time may yield misleading results. For example, to look at the effects of total size on the dependent variables without considering job level proved to be inappropriate since it is clear that total organization size has different kinds of effects on perceptions of needs and need satisfaction at different managerial levels. As Porter and Lawler (1965, p. 48) put it: "Organizations appear to be much too complex for a given variable to have a consistent unidirectional effect across a wide variety of types of conditions."

The Moderating Effects of Managers' Personal Characteristics

Four variables were studied with the purpose of investigating their moderating effects (if any) upon the relationships between the task and organizational variables studied and the different measures of managerial motivation employed. The four variables are age, education, seniority, and interest in job. The results of data analysis pertaining to these moderating effects are presented below. The statistical procedure applied is similar to that used to get at the interaction effects presented in the section above.

The Moderating Effects of Age

Age appears to significantly moderate the relationships between certain organizational variables and some measures of managerial motivation.

1. Age moderates the relationships between role-set diversity and need fulfillment deficiency (significant at the .001 level). Highly diversified role-sets were found in a previous section of this chapter to produce less need fulfillment deficiencies than the less diversified role-sets. However, when the age variable is introduced, it appears that younger managers (20-44) in low and medium diversified role-sets tend to perceive significantly more need fulfillment deficiencies, less need fulfillment, and fewer possibilities for need fulfillment than older managers (45 and older) do. However, in the highly diversified role-sets, older managers perceive more need fulfillment deficiency, and fewer possibilities for need fulfillment than younger managers do. This suggests that younger managers find highly diversified role-sets to be more conducive for need fulfillment than older managers. This may be of importance

when making decisions regarding the selection and promotion of managers, since knowing a manager's age helps predict his attitudes in the different types of role-sets.

2. Age moderates the relationships between job-related information on the one hand and need fulfillment (significant at the .01 level), and need fulfillment deficiencies on the other. Older managers within all categories of information perceive more need fulfillment than younger managers. Older managers in the adequately and sufficiently informed categories tend to perceive less need fulfillment deficiencies than younger managers do. On the other hand, in the inadequately informed category, younger managers perceive less need fulfillment deficiencies than older managers. The moderating effects of age upon the relationships between information and deficiencies is significant at the .05 level.

3. Total size was found to be related to the dependent variables studied such that small sized companies produce less need fulfillment deficiency and greater possibilities for need fulfillment. However, when looking at the age subgroups within each size category, we find that in small sized companies older managers perceive fewer possibilities for need fulfillment and more need fulfillment deficiencies than younger managers. On the other hand, in medium and large sized companies older managers perceive greater possibilities for need fulfillment and less need fulfillment deficiencies (significant at the .02 level).

4. Within flat organization structures, younger managers perceive more need fulfillment and less need fulfillment deficiencies than older managers do, while in intermediate as well as tall structures, older managers tend to get more need fulfillment and less need fulfillment deficiencies (significant at the .02 level).

5. At top levels of management, older managers perceive more need fulfillment deficiencies than younger managers do, while at middle and lower middle levels older managers perceive less deficiencies than younger managers do. This finding contradicts Porter's (1962) finding that need fulfillment deficiencies tend to increase at each successive lower level of the management hierarchy regardless of age. The moderating effect of age on the relationships between job level and need fulfillment deficiencies is significant at the .02 level.

The Moderating Effects of Interest in Job

1. Interest in job moderates the relationships between job-related information and measures of managerial motivation. Among equally informed managers, those less interested in their jobs tend to perceive more need fulfillment deficiencies than the highly interested managers. The moderating effect of interest in job upon the relationships between information and need fulfillment deficiencies is significant at the .001 level.

2. Within the three different types of role-set studied, less interested managers tend to get more need fulfillment than the more interested managers (significant at the .05 level).

Generally the results of data analysis appear to support the hypothesis that interest in job has some moderating effects upon the relationships between certain organizational variables and managers' perceptions of needs and need satisfaction. However, it is clear that the moderating effects of interest in job do not seem to operate in the same direction across all conditions.

1. In low and highly diversified role-sets, the more senior managers (20 years or more) tend to perceive more need fulfillment deficiencies than the less senior managers (1 to 20 years) (approaches the .05 level of significance). Similarly, in low and highly diversified role-sets, more senior managers get less fulfillment than the less senior (significant at the .01 level). On the other hand, in medium diversified role-sets, the senior managers get more need fulfillment.

2. At middle levels of management, the more senior managers perceive less need fulfillment, and more need fulfillment deficiencies. On the other hand, at the lower-middle level, the more senior managers tend to perceive more need fulfillment and less need fulfillment deficiencies.

3. Within the inadequately informed managers category, the more senior managers perceive more need fulfillment, less need fulfillment deficiencies, and greater possibilities for need fulfillment than the less senior managers. The moderating effects of seniority upon the relationships between job-related information and perceived need fulfillment proves to be significant at the .001 level, while those with need fulfillment deficiencies, and possibility of need fulfillment fail to reach the .05 level of significance (approaching the .30 and the .95 levels respectively).

Given the above results, seniority appears to have some moderating effects upon the relationships between organizational variables and managers' perceptions of needs and need satisfaction, and like age and interest in job, the moderating effects of seniority do not operate in the same direction in all conditions.

1. In flat organization structures, more educated managers (17 years of schooling and more) tend to perceive more need fulfillment than the less educated managers. However, in the intermediate and tall structures, it is the less educated managers who perceive more need fulfillment (significant at the .01 level). On the other hand, in both flat and intermediate structures, the more educated managers tend to perceive fewer possibilities for need fulfillment than the less educated managers (significant beyond the .001 level).

2. At the top and middle management levels, the more educated managers tend to perceive more need fulfillment, greater possibilities for need fulfillment, and less need fulfillment deficiencies than the less educated managers. However, at the lower-middle level, the more educated managers tend to get less fulfillment, fewer possibilities for need satisfaction, and more need fulfillment deficiencies (significant at the .001 level).

Summary

In this chapter we have reported the results of data analysis of the present study. The basic findings of the study to this point can be summarized as follows:

1. For the sample as a whole, the lower-order needs (security, social, and esteem) are perceived to be highly fulfilled relative to expectations, hence producing the least need fulfillment deficiencies and claiming relatively little importance. Moreover, such needs are perceived to be highly attainable.

2. For the sample as a whole, the higher-order needs (autonomy, self-actualization, and information) produce the greatest deficiencies, claim the most importance, and are perceived to be less attainable than the lower-order needs.

3. Managers' perceptions of need fulfillment deficiencies, need fulfillment, need importance, and possibilities of need fulfillment appear to be interrelated. Therefore, it seems more appropriate for a better understanding of the phenomenon of managerial motivation to consider all such perceptions simultaneously. This tends to support the discrepancy model presented in Chapter III.

4. Higher-level managers tend to perceive less need fulfillment deficiencies, more need fulfillment, and greater possibilities for need fulfillment. On the other hand, managers at different organizational levels tend to perceive the importance of the various need items in much the same way.

5. Role-set diversity significantly relates to managers' perceptions of need fulfillment deficiencies, need fulfillment, and possibility of need fulfillment. The highly diversified role-sets produce less need fulfillment deficiencies, more need fulfillment, and greater possibilities for need fulfillment.

6. Line managers perceive less need fulfillment deficiencies, more need fulfillment, and greater possibilities of need fulfillment than staff and combined line/staff managers do. Managers holding combined line/staff positions are consistently intermediate between the basically line and the basically staff managers.

7. Small sized companies produce less need fulfillment deficiencies, more need fulfillment, and greater possibilities for need fulfillment than medium and larger sized companies.

8. Flat structures produce the greatest deficiencies and the greatest possibilities for need fulfillment. Intermediate structures produce the least need fulfillment deficiencies, the least need fulfillment, and intermediate level of possibility of need fulfillment. Tall structures produce an intermediate level of need fulfillment deficiencies, the highest level of need fulfillment, and the least level of possibility of need fulfillment.

9. More informed managers tend to perceive less need fulfillment deficiencies, more need fulfillment, and greater possibilities for need fulfillment than the less informed managers do.

10. Small sized subunits produce the largest need fulfillment deficiencies, while large sized subunits produce the least need fulfillment deficiencies. Similarly, small subunits produce less need fulfillment, and fewer possibilities for need fulfillment than larger subunits.

11. Office managers perceive more need fulfillment, less need fulfillment deficiencies, and greater possibilities for need fulfillment than the basically field managers. However, combined office/field managers tend to get more need fulfillment, less need fulfillment deficiencies, and greater possibilities for need fulfillment than the basically office managers.

12. The measure of perceived need importance does not appear to be significantly related to any of the organizational variables studied.

13. Significant interaction effects exist between several organizational variables as they relate to the dependent variables. Job level significantly interacts with total size, organization structure, line/staff type of job, and organizational location. Organization structure interacts with subunit size, location, and total size. Total size interacts with subunit size, and organizational location. Job-related information interacts with organization structure, organizational location, subunit size, and job level. Finally, role-set interacts with total size, and job level.

14. Age, education, seniority, and interest in job appear to have some moderating effects on the relationships between certain organizational variables and managerial motivation.

A Test of Herzberg's Two-Factor Theory

Herzberg's two-factor theory (1959) postulates two basic propositions: that job factors leading to job satisfaction are different and separate from job factors leading to job dissatisfaction, and that feelings of job satisfaction are produced by factors related to the content of the job performed while feelings of job dissatisfaction are determined by job context factors.

To test the validity and generality of this theory, the respondents in the present study were asked to indicate for each of 15 job factors whether it induces him to stay with his present organization (a source of satisfaction or a motivator), makes him think of leaving his present organization (a source of dissatisfaction or a hygiene), or both. The logic behind the question is simply that granting the two-factor theory to be the right explanation of managers' work motivation, we would

expect each factor to be checked only once under either one of the two headings but never twice or under the heading "both" since this contradicts the theory. Table 4-17 presents the frequencies of the respondents' ratings of the 15 job factors.

TABLE 4-17

RESPONDENTS' PERCEPTIONS OF 15 JOB FACTORS AS SOURCES OF
SATISFACTION OR DISSATISFACTION (N = 425)

Job Factor	Induce me to stay	Make me think of leaving
1. The recognition for achievement I get	246	62
2. The importance of my job	324	29
3. The physical surroundings	300	80
4. The possibilities for advancement and growth	208	95
5. The responsibility I assume	344	29
6. The salary I get	240	88
7. Relationships with my peers	307	51
8. The security of my job	323	45
9. Relationships with subordinates	384	9
10. The authority and decision-making power I have	230	76
11. Possibilities for task achievement	316	52
12. Relationships with superiors	251	68
13. Challenges to my ability	260	71
14. The fringe benefits I get	343	35
15. Supervision	284	74

To test the hypothesis that the above factors are separate and independent from each other in the feelings they produce, a chi square test of independence was applied on the above frequencies which resulted in a chi square equals 27.6 which with 14 degrees of freedom is significant at the .02 level. Thus, indicating a significant degree of association and interdependence between the different job factors. In other

words, factors leading to job satisfaction are not significantly different from those leading to job dissatisfaction.

The second hypothesis postulated by the two-factor theory is that feelings of job satisfaction are determined by job content factors, while feelings of job dissatisfaction are determined by job context factors. Table 4-18 indicates that this postulate does not hold the generality claimed for it. It is apparent from Table 4-18 that job context variables contributed considerably more to feelings of satisfaction than job content variables did. On the other hand, job content factors contributed about equally to feelings of job dissatisfaction.

TABLE 4-18
RELATIONSHIPS BETWEEN TYPE OF MOTIVATION
(SATISFACTION AND DISSATISFACTION)
AND JOB CHARACTERISTIC

Job characteristic	Frequency mentioned as source of satisfaction	Frequency mentioned as source of dissatisfaction
Job content	1928	414
Job context	2432	450
Total	4360	864

The above simple inspection of the data proves the two-factor theory to be inadequate representation of the phenomenon of managerial motivation. Moreover, there is some evidence to the effect that managers' perceptions of job factors as either sources of satisfaction or dissatisfaction partly depend upon their positions on the various organizational variables studied.

1. Lower-level managers tend to perceive the hygiene factors more as sources of dissatisfaction than higher-level managers do as Table 4-19 indicates.

TABLE 4-19

PERCENTAGES OF MANAGERS' RATINGS OF THE HYGIENE FACTORS
AS SOURCES OF DISSATISFACTION*
(three managerial levels)

Factors	Top	Middle	Lower-middle
1. The physical surroundings	14.8%	17.4%	33.0%
2. The salary I get	23.3	15.9	19.9
3. Relations with peers	7.4	9.9	16.5
4. The security of my job	14.7	5.3	10.3
5. Relations with subordinates	0.0	3.9	4.6
6. Relations with superiors	19.7	9.8	21.0
7. The fringe benefits I get	14.8	10.7	8.1
8. Supervision	19.6	21.1	24.4

*Chi square = 28.5 with 14 degrees of freedom is significant at the .02 level.

2. Managers in smaller sized companies tend to perceive the motivators more as sources of satisfaction than managers in larger sized companies do as Table 4-20 indicates.

TABLE 4-20
PERCENTAGES OF MANAGERS' RATINGS OF THE MOTIVATORS
AS SOURCES OF SATISFACTION*
(three size categories)

Factors	Small	Medium	Large
1. The recognition for achievement	61.1%	55.1%	57.4%
2. The importance of my job	78.3	78.6	70.8
3. The possibilities for advancement	57.2	46.3	48.8
4. The responsibility I assume	81.3	79.8	81.8
5. The authority and decision-making power I have	60.4	51.8	50.3
6. Possibilities for task achievement	78.3	74.3	70.0
7. Challenges to my ability	64.9	62.8	55.1

*Chi square = 21.8 with 12 degrees of freedom is significant at the .05 level.

Tables 4-19 and 4-20 do indicate that the motivation-hygiene dichotomy may be conditioned by at least two organizational variables: a) managerial level in the hierarchy, and b) total organization size. This finding is supported by Friedlander (1965), Gruenfeld (1962), and centers and Bugental (1966) who found that individuals at higher occupational levels tend to derive more satisfaction from and attach more importance to job content factors than individuals at lower occupational

levels who derive more satisfaction from and attach more importance to job context variables.

In summarizing the results of our test of the validity and generality of Herzberg's two-factor theory, it is found that:

1. Job factors leading to job satisfaction are neither independent nor separate from job factors leading to job dissatisfaction. Each of 15 job factors was perceived to produce feelings of satisfaction, dissatisfaction, and both.

2. No definite relationship exists between type of motivation (satisfaction vs. dissatisfaction) and job characteristics (content vs. context). Contrary to Herzberg's theory, job context factors were found to contribute significantly more to feelings of job satisfaction than job content factors. Similarly, job content and job context factors contributed about equally in producing feelings of job dissatisfaction.

3. Perceptions of job factors as either sources of job satisfaction or job dissatisfaction appear to be conditioned by at least two organizational variables: job level, and total size thus reducing the generality of the two-factor theory.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study originated out of a recognition of the importance of the managerial role in this era of complex and large organizations, and of the importance of understanding managerial motivation as a requirement for understanding and hopefully improving managers' work behaviors. At the time this study was conducted, two basic streams of thought were reflected in the literature on managerial motivation: Herzberg's two-factor theory with its hedonic conception of motivation, and Porter's studies on job attitudes in management based on a Maslow type need-hierarchy system.

The general objective of the study can be expressed as the desire to contribute to a deeper and better understanding of the motivational determinants of managers' work behaviors. However, the specific purposes of the study were:

1. To investigate the relationships between several organizational variables and managers' perceptions of needs and need satisfaction.
2. To investigate the interaction effects between the organizational variables as they relate to managerial motivation.
3. To investigate the moderating effects of certain personal characteristics of managers upon the relationships between the organizational variables and managers' perceptions of needs and need satisfaction.

Moreover, the study was intended to generate a test of the generality and validity of Herzberg's two-factor theory.

In the present chapter we are concerned with summarizing the basic findings of the study with regard to each of the above objectives and relating the findings to the stated hypotheses and prior research findings.

Concerning the first objective, it was hypothesized that managers' perceptions of need fulfillment deficiencies, need fulfillment, need importance, and the possibilities of need fulfillment tend to vary with variations in the organizational variables studied. Results of data analysis tend generally to confirm our research hypotheses. Certain organizational variables seem to have stronger relationships to managers' perceptions of needs and need satisfaction than other organizational variables. Our data analysis indicates that the organizational variables that have the strongest relationships with the dependent variables are: job-related information, job level, and role-set diversity. Moreover, it is clear that the relationships of each of the organizational variables studied with the different dependent variables vary in the levels of significance they reach.

When relating the results to prior research findings, it is clear that Porter's major findings as to the effect of job level and line vs. staff type of job on managers' perceptions of needs and need satisfaction are generally confirmed. However, contrary to Porter's findings, in the present study more conclusive results regarding the effects of total company size and organization structure were obtained. On the other hand, contrary to Kahn et al. (1964) finding, highly diversified role-sets were found to produce greater need fulfillment than the less diversified role-sets. Similarly, the effects of subunit size and organizational location on the

dependent variables were found to be in the opposite directions from those found in prior research studies. While most studies on the impact of subunit size indicate a trend for small subunits to produce more need fulfillment than larger sized subunits, the reverse was found here and the explanation presented was that prior studies dealt with blue-collars rather than with managers. Likewise, contrary to Paine et al. (1966) combined office/field managers were found to perceive more need fulfillment than both basically office and basically field managers.

Concerning the second objective, the results of data analysis confirm the postulate that interaction effects do exist between the organizational variables as they relate to managerial motivation. This implies that it is no longer acceptable to study the relationships between managers' perceptions of needs and need satisfaction and any organizational variable without considering such interactions since this is apt to produce misleading results. It also points to the need for more elaborate statistical and analytical tools that enable the study of the interactions between more than two variables at the same time.

Concerning the third objective, age, seniority, education, and interest in job appear to exert significant moderating effects upon the relationships between some of the independent and dependent variables. Education, seniority, and interest in job however, show less significant moderating effects than the age variable. This does not detract from the importance of the concept of moderating variables; rather it points to the need for further research to single out such variables.

With regard to Herzberg's theory, it is evident that job factors leading to job satisfaction are neither independent nor separate from job factors leading to job dissatisfaction, that job content factors

contribute to feelings of job dissatisfaction and that job context factors contribute to feelings of job satisfaction. Moreover, managers' perceptions of job factors as sources of satisfaction, dissatisfaction, or both appear to be affected to some extent by their positions on some organizational variables.

This study can be concluded by summarizing its findings in the following way: managers' perceptions of needs, need satisfaction, and the environmental variables influencing need satisfaction appear to be affected by the managers' positions on certain organizational variables. On the other hand, organizational variables tend to interact as they relate to managers' perceptions. Moreover, the relationships between some of the organizational variables studied and managerial motivation are moderated by managers' age, seniority, education, and interest in job.

Implications of the Study

1. The study tends to support the discrepancy model outlined in Chapter III. The measures of managerial motivation derived from that model appear to be significantly interrelated in much the same way as the model postulates. This points to the validity of the discrepancy model as an explanation of the motivational determinants of managers' work behaviors. However, it is clear that the measure of perceived need importance does not appear to be a significant variable in explaining individual differences in motivation since managers classified along the dimensions of most of the organizational variables studied appeared to rank the importance of the various need items in much the same way.

2. Since it is clear now that managers differ in their perception of needs and need satisfaction depending upon their positions on several

organizational variables, it may be more appropriate for future research to be directed at limited samples at certain job levels, company sizes, or any dimension of one of the various organizational variables. This would facilitate understanding in depth of the motivation of rather homogeneous groups of managers.

3. The fact that interactions do exist between the organizational variables points to the possibility of using some variations of laboratory experimentation in future research on managerial motivation. By simulating variations in a single organization variable (e.g., job-related information) while holding others constant we can get at a better understanding of the nature of how it relates to the dependent variables.

APPENDIX I
THE QUESTIONNAIRE

GRADUATE SCHOOL OF BUSINESS
INDIANA UNIVERSITY

RESEARCH ON THE MANAGER'S JOB

DO NOT WRITE YOUR NAME ON THIS BOOKLET

PART ONEDirections

On the following pages of part one will be listed several characteristics connected with your position in your company. For each characteristic will you please give the following ratings:

- I. a. How important is this characteristic to you?
- b. In your present position in your company, to what extent does this characteristic exist?
- c. How much of the characteristic do you think should be connected with your present position?

Each of the above ratings will be made on the following scale:

(minimum) $\overset{!}{\text{---}}$ 1 $\overset{!}{\text{---}}$ 2 $\overset{!}{\text{---}}$ 3 $\overset{!}{\text{---}}$ 4 $\overset{!}{\text{---}}$ 5 $\overset{!}{\text{---}}$ 6 $\overset{!}{\text{---}}$ 7 (maximum)

In the above scale the numbers 1 through 7 represent the following amounts:

- | | |
|-------------------------|----------------------------------|
| 1 = very little or none | 5 = considerable amount |
| 2 = just a little | 6 = great deal but not a maximum |
| 3 = somewhat | amount |
| 4 = average amount | 7 = very much or maximum |

Please put a mark (X) above the number on the scale that you think most accurately represents the amount of the characteristic being rated. If you think there is "very little or none" of the characteristic presently associated with the position, you would place an X above the number 1. If you think there is "just a little," you would place an X above number 2, and so on. For each scale, place an X-mark above only one number. Please do not omit any scales.

- II. For each characteristic, please give the following rating also:

In your opinion, what are the chances that you can get the level of the characteristic that you think should be connected with your present job?

Please give your rating as to the above question by placing an (X) on the percentage on the following scale that you think most accurately represents your opinion.

$\overset{!}{\text{---}}$ 10% $\overset{!}{\text{---}}$ 20% $\overset{!}{\text{---}}$ 30% $\overset{!}{\text{---}}$ 40% $\overset{!}{\text{---}}$ 50% $\overset{!}{\text{---}}$ 60% $\overset{!}{\text{---}}$ 70% $\overset{!}{\text{---}}$ 80% $\overset{!}{\text{---}}$ 90% $\overset{!}{\text{---}}$ 100%

1. The feeling of self-esteem a person gets from being in my management position.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

2. The authority connected with my management position.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

3. The opportunity for personal growth and development in my management position.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

4. The prestige of my management position inside the company (that is, the regard received from others in the company).

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

5. The opportunity for independent thought and action in my management position.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

6. The feeling of security in my management position.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

7. The feeling of self-fulfillment a person gets from being in my management position (that is, the feeling of being able to use one's own unique capabilities, realizing one's own potentialities).

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

8. The opportunity in my management position, for participation in the setting of goals.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

9. The prestige of my management position outside the company (that is, the regard received from others not in the company).

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

10. The feeling of worthwhile accomplishment in my management position.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

11. The opportunity in my management position, to give help to others.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

12. The opportunity to develop close friendships in my management position.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

13. The opportunity in my management position, for participation in the determination of methods and procedures.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

14. The salary I get in my management position.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

15. The feeling of being in-the-know in my management position.

a. How important is this to me?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

b. How much is there now?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

c. How much should there be?

(minimum) $\frac{\quad}{1}$ $\frac{\quad}{2}$ $\frac{\quad}{3}$ $\frac{\quad}{4}$ $\frac{\quad}{5}$ $\frac{\quad}{6}$ $\frac{\quad}{7}$ (maximum)

d. The chance to get the amount of the characteristic that should be there.

$\frac{\quad}{10\%}$ $\frac{\quad}{20\%}$ $\frac{\quad}{30\%}$ $\frac{\quad}{40\%}$ $\frac{\quad}{50\%}$ $\frac{\quad}{60\%}$ $\frac{\quad}{70\%}$ $\frac{\quad}{80\%}$ $\frac{\quad}{90\%}$ $\frac{\quad}{100\%}$

PART TWODirections

1. The following are several factors that may affect you on your job in one way or the other. You are asked to give your opinion as to the following two questions:

a. From among the factors listed below which do you think are the factors that induce you to stay with your present company?

b. From among the factors listed below, which do you think are the factors that make you think of leaving your present company?

For each factor please put the mark (X) either under the heading "Induce me to stay" or "Make me think of leaving" depending upon your opinion. If a factor is deemed important in arousing the two feelings at the same time, as when the factor is present in your job it induces you to stay, but when it is absent it makes you think of leaving, please put the mark (X) under both headings.

<u>PLEASE DO NOT OMIT ANY FACTORS:</u>	<u>Each Factor Should be Checked</u>	
	<u>Once or Twice</u>	
	<u>Induce me</u>	<u>Make me think</u>
	<u>to stay</u>	<u>of leaving</u>
1. The recognition for achievement I get	_____	_____
2. The importance of my job	_____	_____
3. The physical surroundings	_____	_____
4. The possibilities for advancement and growth	_____	_____
5. The responsibility I assume	_____	_____
6. The salary I get	_____	_____
7. Relationships with my peers	_____	_____
8. The security of my job	_____	_____
9. Relationships with my subordinates	_____	_____
10. The authority and decision making power I have	_____	_____
11. Possibilities for task achievement	_____	_____
12. Relationships with my superiors	_____	_____
13. Challenges to my ability	_____	_____
14. The fringe benefits I get	_____	_____
15. Supervision	_____	_____

II. If a problem comes up in your work and it isn't all settled by the time you go home, how likely is it that you will find yourself thinking about it after work? (Please check one of the following alternatives).

- ☐ I am almost sure to think about it after work.
- ☐ There's a pretty good chance I'll think about it.
- ☐ I probably wouldn't think about it.
- ☐ I am almost sure I wouldn't think about it after work.

III. In your job you get in touch with different people. For any average work week how many of the following do you get in touch with (whether from your own department, from other departments, or from outside the company)? Will you please put the mark (X) in front of the persons you contact.

- ☐ Subordinates
- ☐ Superiors
- ☐ Peers
- ☐ Staff specialists
- ☐ Customers
- ☐ Suppliers of materials
- ☐ Competitors
- ☐ Government officials
- ☐ Politicians
- ☐ Union representatives
- ☐ Community leaders
- ☐ Management consultants
- ☐ Suppliers of credit
- ☐ Journalists
- ☐ Members of professional associations
- ☐ Suppliers of services--advertising agents,

IV. How do you rate the adequacy of information needed for action in your management position in terms of quantity and quality from all sources? (Please check one of the following alternatives).

- ☐ adequate most of the time
- ☐ not adequate but sufficient
- ☐ Inadequate most of the time

PART THREE

We are interested in knowing some things about you for purposes of data analysis. This information will not be used to identify you personally. Please give the following information about yourself:

1. Title of your present position in your company _____
2. Present department in your company (check one): _____
 - _____ sales, marketing
 - _____ finance
 - _____ accounting
 - _____ personnel
 - _____ purchasing
 - _____ research and development
 - _____ production
 - _____ general administration
 - _____ other (please specify) _____
3. How many years have you been working in business, or elsewhere?
(check one)
 - _____ 0-1 year
 - _____ 1-3 years
 - _____ 3-5 years
 - _____ 5-10 years
 - _____ 10-15 years
 - _____ 15-20 years
 - _____ 20-30 years
 - _____ 30 years and over
4. How long have you been working with your present company? (check one)
 - _____ 0-1 year
 - _____ 1-3 years
 - _____ 3-5 years
 - _____ 5-10 years
 - _____ 10-15 years
 - _____ 15-20 years
 - _____ 20-30 years
 - _____ 30 years and over
5. How many levels of supervision are there in your total company from the first-level supervisor to the head of the organization? (If you are working in a separate plant, branch or a division of a multi-unit company, give the number of levels in your unit.) (Give the number): _____

6. Approximately how many employees (management and nonmanagement) are there in your company? (If you are working in a separate plant, branch or a division of a multi-unit company, give the number of employees in your unit.) (check one):

☐ 1 to 49
☐ 50 to 99
☐ 100 to 499
☐ 500 to 999
☐ 1,000 to 4,999
☐ 5,000 to 9,999
☐ 10,000 to 29,999
☐ 30,000 to 99,999
☐ 100,000 to 299,999
☐ 300,000 or more

7. How many years of formal education did you have? _____

8. Type of company you work for. (check one)

☐ transportation and shipping
☐ postal, telegraph and telephone
☐ power, light and electricity
☐ wholesale and retail trade
☐ finance and insurance
☐ chemical and petroleum
☐ mining
☐ steel and metal fabrication
☐ manufacturing
☐ other (please specify) _____

9. Your age (check one)

☐ 20-24
☐ 25-29
☐ 30-34
☐ 35-39
☐ 40-44
☐ 45-49
☐ 50-54
☐ 55-59
☐ 60 or older

10. If you attended a university or a college, what was the specialty you studied? (check one)

☐ Engineering
☐ law
☐ Economics and Business
☐ Other (please specify) _____

11. Do you have a graduate degree? (check one)

☐ Masters
☐ Doctorate
☐ Other (please specify) _____

12. What is your present salary level? (check one)
- ☐ Less than \$500/month
 - ☐ \$500 - \$1,000/month
 - ☐ \$1,000 - \$2,000/month
 - ☐ \$2,000 - \$3,000/month
 - ☐ \$3,000 - \$5,000/month
 - ☐ \$5,000 - \$7,500/month
 - ☐ over \$7,500/month
13. How many levels of supervision are there above your position?
(Give the number) _____
14. Approximately how many employees (management and nonmanagement) are there in your department or division? (Give the number) _____
15. How do you rate your job along the following dimensions (check one)
- ☐ basically line
 - ☐ basically staff
 - ☐ combined line/staff
16. How do you rate your job along the following dimensions? (check one)
- ☐ basically office work
 - ☐ basically field work
 - ☐ combined office/field work

APPENDIX II

NEED ITEMS AND CATEGORIES STUDIED

Need Category	Need Item
Security	1. The feeling of security in my management position.
Social	1. The opportunity in my management position to give help to others. 2. The opportunity to develop close friendships in my management position.
Esteem	1. The feeling of self-esteem a person gets from being in my management position. 2. The prestige of my management position inside the company (that is, the regard received from others in the company). 3. The prestige of my management position outside the company (that is, the regard received from others not in the company).
Autonomy	1. The authority connected with my management position. 2. The opportunity for independent thought and action in my management position. 3. The opportunity in my management position, for participation in the setting of goals. 4. The opportunity in my management position, for participation in the determination of methods and procedures.
Self-actualization	1. The opportunity for personal growth and development in my management position. 2. The feeling of self-fulfillment a person gets from being in my management position (that is, the feeling of being able to use one's own unique capabilities, realizing one's own potentialities). 3. The feeling of worthwhile accomplishment in my management position.
Pay	1. The salary I get in my management position.
Information	1. The feeling of being in-the-know in my management position.

APPENDIX III

TABLE-1
MEAN NEED FULFILLMENT FOR EACH NEED ITEM
AS A FUNCTION OF JOB LEVEL AND
TOTAL COMPANY SIZE

Need Category and Item	Total Size	Job Level								
		Top			Middle			Lower Middle		
		Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Security	1	5.5	5.1	5.1	5.3	5.3	5.3	6.2	5.1	4.9
Social	1	5.7	5.4	5.0	5.5	5.3	5.6	5.7	5.4	4.5
	2	4.8	4.6	4.4	4.6	4.4	4.5	4.7	4.4	4.5
Esteem	1	5.1	4.8	4.6	5.0	4.8	4.9	5.1	4.5	4.1
	2	5.0	4.9	4.1	5.0	5.1	5.1	5.5	4.5	4.0
	3	5.2	4.9	4.7	5.2	5.0	5.0	5.6	5.2	4.0
Autonomy	1	5.5	4.8	4.2	5.3	5.0	5.0	5.0	4.2	3.8
	2	5.7	5.2	5.1	5.3	5.5	5.1	5.1	4.5	5.0
	3	5.5	5.1	4.5	5.0	5.2	5.3	4.8	4.4	3.9
	4	5.3	4.8	4.2	4.9	5.0	5.4	5.2	4.5	4.7
Self- actuali- zation	1	5.6	5.1	4.5	5.5	5.5	5.5	5.7	4.5	4.5
	2	5.5	5.0	4.7	5.4	5.2	5.2	5.1	4.4	4.5
	3	5.5	5.0	6.1	5.6	5.3	5.2	5.1	4.4	5.0
Pay		5.1	5.1	4.8	4.9	5.1	5.3	4.8	4.4	4.6
Information		5.2	5.0	3.8	5.1	5.1	5.1	4.7	4.4	4.4

The chi square test applied on the plus and minus totals of the number of changes in the sizes of the above means has produced a $X^2 = 21.7$ which with 2 df is significant at the .001 level.

TABLE-2
MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH
NEED ITEM AS A FUNCTION OF JOB LEVEL
AND ORGANIZATION STRUCTURE

Need Category and Item		Job Level								
		Top			Middle			Lower Middle		
		Structure			Structure			Structure		
		Flat	Inter-mediate	Tall	Flat	Inter-mediate	Tall	Flat	Inter-mediate	Tall
Security	1	3.2	1.7	1.2	1.2	1.6	2.1	1.0	0.7	2.3
Social	1	2.1	1.5	1.2	1.3	1.3	1.4	1.4	1.5	1.0
	2	1.7	1.5	1.0	1.1	1.5	1.6	2.0	1.4	1.0
Esteem	1	2.3	1.6	1.3	1.5	1.8	1.3	1.6	1.4	1.8
	2	2.7	1.4	1.1	1.4	1.5	1.3	1.3	1.6	1.4
	3	1.5	1.5	1.2	1.2	1.4	1.1	1.7	1.5	1.0
Autonomy	1	2.5	1.6	1.3	1.8	1.4	1.6	1.5	1.6	1.3
	2	3.3	1.3	1.0	1.2	1.5	1.6	1.5	1.4	1.5
	3	2.6	1.7	1.4	1.5	1.5	2.0	2.4	2.4	2.6
	4	2.0	1.6	1.6	1.9	1.4	2.0	2.5	2.0	1.0
Self-actualization	1	2.8	1.6	1.5	2.1	1.5	1.3	1.7	1.7	2.6
	2	2.5	1.8	1.5	1.3	1.6	1.6	2.2	1.4	2.0
	3	1.7	1.7	2.0	1.5	1.6	1.8	2.3	2.0	2.0
Pay		1.6	1.4	1.3	1.5	1.5	1.8	1.5	1.5	1.5
Information		2.5	1.5	1.6	1.3	1.4	1.7	2.5	2.0	1.3

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 29.4$ which with 2 df is significant at the .001 level.

TABLE-3
 MEAN NEED FULFILLMENT FOR EACH NEED ITEM
 AS A FUNCTION OF JOB LEVEL AND
 ORGANIZATIONAL LOCATION

Need Category and Item		Job Level					
		Top		Middle		Lower Middle	
		Location		Location		Location	
		Office	Combined off/fiel	Office	Combined off/fiel	Office	Combined off/fiel
Security	1	5.3	5.3	5.4	5.4	5.7	4.8
Social	1	5.5	5.6	5.6	5.5	5.3	5.0
	2	4.8	4.6	4.7	4.5	4.8	4.2
Esteem	1	4.9	4.9	5.0	4.8	4.7	4.4
	2	4.8	5.0	5.1	5.0	5.0	4.1
	3	5.0	5.1	5.1	5.3	4.9	4.8
Autonomy	1	5.0	5.3	5.3	5.1	4.6	3.9
	2	5.4	5.5	5.4	5.4	5.1	4.6
	3	5.2	5.4	5.3	5.2	4.2	4.4
	4	5.1	5.0	5.4	4.8	5.2	4.3
Self- actuali- zation	1	5.4	5.3	5.6	5.4	5.1	4.6
	2	5.1	5.5	5.4	5.1	4.6	4.6
	3	5.2	5.3	5.4	5.4	5.1	4.4
Fay		5.0	5.2	5.3	5.0	4.8	4.3
Information		5.0	5.0	5.2	5.0	4.7	4.2

The chi square applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 17.4$ which with 2 df is significant at the .001 level.

TABLE-4
 MEAN NEED FULFILLMENT FOR EACH NEED ITEM
 AS A FUNCTION OF ORGANIZATION
 STRUCTURE AND SUBUNIT SIZE

Need Category and Item		Organization Structure								
		Flat			Intermediate			Tall		
		Subunit Size			Subunit Size			Subunit Size		
		Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Security	1	5.5	5.3	5.8	5.2	5.0	5.2	5.5	5.3	5.1
Social	1	5.0	5.6	5.4	5.3	5.4	5.3	5.7	5.5	5.4
	2	4.9	5.0	4.5	4.5	4.5	4.5	4.8	4.2	4.3
Esteem	1	4.5	4.1	4.6	4.5	4.5	4.9	5.0	4.8	4.9
	2	4.6	4.7	4.8	4.5	4.8	5.1	5.0	5.1	5.1
	3	5.2	5.0	4.8	4.8	4.8	5.0	4.8	5.1	4.9
Autonomy	1	4.8	4.6	4.7	4.4	4.8	4.9	5.2	4.9	5.1
	2	5.4	5.5	5.1	5.0	5.1	5.1	5.1	5.1	4.8
	3	5.2	4.9	5.4	4.6	5.1	5.2	4.8	5.4	4.8
	4	5.0	4.9	4.8	4.6	5.1	5.1	4.9	5.1	4.9
Self-actuali- zation	1	5.2	4.8	5.0	4.8	5.1	5.2	5.5	5.6	5.5
	2	5.0	5.1	5.0	4.7	4.9	5.0	5.3	5.0	5.0
	3	5.2	4.8	5.2	4.9	5.0	5.3	5.3	5.1	5.0
Pay		4.8	5.1	4.9	4.8	4.7	4.8	5.0	4.9	5.2
Information		4.8	4.6	4.8	4.6	4.7	4.9	4.8	4.7	4.7

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 17.0$ which with 2 df is significant at the .001 level.

TABLE-5
MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH
NEED ITEM AS A FUNCTION OF ORGANIZATION
STRUCTURE AND TOTAL COMPANY SIZE

Need Category and Item	Organization Structure								
	Flat			Intermediate			Tall		
	Total Size			Total Size			Total Size		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Security	1 2.6	2.4	1.2	2.2	1.6	1.7	1.7	1.9	1.3
Social	1 1.5	2.1	1.4	1.4	1.3	1.5	1.5	1.7	1.4
	2 1.5	1.1	2.0	1.5	1.5	1.6	1.4	1.6	2.8
Esteem	1 1.8	2.0	1.8	1.6	1.7	1.7	1.3	1.7	2.3
	2 2.2	1.8	1.6	1.6	1.7	1.6	1.2	1.8	1.2
	3 1.2	1.7	1.4	1.6	1.7	1.6	1.4	1.5	1.2
Autonomy	1 2.3	2.1	1.9	1.7	1.7	1.5	1.4	2.0	1.8
	2 2.3	1.5	1.3	1.6	1.5	1.8	1.6	1.7	1.8
	3 2.0	2.5	1.5	1.7	1.9	1.7	1.8	2.1	2.0
	4 2.0	2.3	1.7	1.5	1.7	1.7	1.7	2.0	1.8
Self-actuali- zation	1 2.4	2.3	2.0	1.8	1.9	1.8	1.3	2.1	2.3
	2 1.7	2.3	1.8	1.7	1.8	1.9	2.0	2.0	2.2
	3 1.6	2.0	1.7	1.8	1.9	1.8	2.1	2.0	2.2
Pay	1.7	1.4	1.4	1.6	1.4	1.7	1.6	1.6	1.2
Information	2.3	1.8	1.9	1.6	1.7	1.7	2.0	2.0	1.8

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 9.4$ which with 2 df is significant at the .01 level.

TABLE-6
MEAN NEED FULFILLMENT FOR EACH NEED ITEM
AS A FUNCTION OF TOTAL COMPANY SIZE AND
SUBUNIT SIZE

Need Category and Item		Total Company Size								
		Small			Medium			Large		
		Subunit Size			Subunit Size			Subunit Size		
		Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Security	1	5.5	5.2	5.3	5.3	5.1	5.2	5.2	5.1	5.2
Social	1	5.4	5.7	5.8	5.2	5.3	5.3	5.2	5.6	5.2
	2	4.6	4.4	4.4	4.7	4.3	4.4	4.6	4.8	4.5
Esteem	1	5.0	4.5	5.1	4.4	4.4	4.8	4.4	4.7	4.7
	2	4.9	5.0	5.3	4.6	4.7	5.3	4.5	4.9	4.7
	3	5.0	4.8	5.2	4.9	4.7	5.0	4.7	5.3	4.7
Autonomy	1	5.1	5.1	5.3	4.4	4.5	5.0	4.4	4.9	4.7
	2	5.3	5.2	5.2	5.0	5.2	5.1	4.9	5.0	4.9
	3	5.1	5.2	5.2	4.5	5.0	5.4	4.6	5.2	4.8
	4	5.0	5.1	5.4	4.6	4.7	5.0	4.6	5.7	4.7
Self-actualization	1	5.3	5.4	5.6	4.8	4.8	5.3	5.1	5.3	4.9
	2	5.3	5.2	5.3	4.7	4.7	5.1	4.7	5.1	4.8
	3	5.4	5.0	5.6	4.8	4.8	5.1	4.8	5.2	5.1
Fay		5.0	4.8	4.8	4.6	4.7	5.0	4.8	5.0	5.0
Information		4.9	4.5	5.0	4.6	4.6	5.0	4.7	5.1	4.6

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $\chi^2 = 5.8$ which with 2 df is approaching the .05 level.

TABLE-7
MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH NEED
ITEM AS A FUNCTION OF JOB-RELATED INFORMATION
AND ORGANIZATIONAL STRUCTURE

Need Category and Item		Job-Related Information								
		Adequate			Sufficient			Inadequate		
		Structure			Structure			Structure		
		Flat	Inter- mediate	Tall	Flat	Inter- mediate	Tall	Flat	Inter- mediate	Tall
Security	1	2.4	1.7	1.4	1.6	1.7	2.1	2.0	2.4	1.7
Social	1	1.6	1.3	1.2	1.7	1.3	1.7	1.2	1.8	1.0
	2	1.4	1.5	1.4	1.6	1.5	2.0	1.0	1.7	1.6
Esteem	1	1.8	1.7	1.4	1.7	1.5	1.7	2.2	2.4	1.5
	2	2.0	1.4	1.2	1.8	1.6	1.6	1.3	2.4	1.6
	3	1.2	1.7	1.0	1.6	1.6	1.6	1.5	1.4	1.5
Autonomy	1	2.4	1.6	1.3	1.8	1.5	1.8	1.7	2.4	1.8
	2	1.7	1.6	1.3	1.6	1.5	2.0	1.5	2.1	1.5
	3	1.6	1.6	1.5	2.4	1.9	2.1	1.0	2.0	2.2
	4	1.8	1.7	1.5	2.2	1.5	2.1	2.0	2.1	1.6
Self- actuali- zation	1	2.2	1.7	1.6	2.2	1.8	1.9	2.0	2.4	1.5
	2	1.6	1.8	1.5	2.1	1.6	2.3	2.2	2.5	2.1
	3	1.7	1.8	1.8	1.8	1.8	2.2	1.7	2.3	2.1
Pay		1.3	1.6	1.3	1.6	1.5	1.7	2.0	1.9	1.8
Information		1.7	1.5	1.4	2.4	1.8	2.2	1.7	2.1	2.3

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 9.7$ which with 2 df is significant at the .01 level.

TABLE -8
MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH
NEED ITEM AS A FUNCTION OF JOB-RELATED
INFORMATION AND SUBUNIT SIZE

Need Category and Item		Job-Related Information								
		Adequate			Sufficient			Inadequate		
		Subunit Size			Subunit Size			Subunit Size		
		Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Security	1	1.9	1.9	1.2	1.7	2.0	1.8	2.0	3.2	1.0
Social	1	1.5	1.3	1.1	1.5	1.5	1.6	1.7	1.6	1.6
	2	1.5	1.4	1.2	1.6	1.5	1.8	1.5	2.2	1.0
Esteem	1	1.8	1.7	1.1	1.6	1.5	1.7	2.5	2.1	1.5
	2	1.7	1.5	0.9	1.7	1.4	1.6	2.4	2.2	1.2
	3	1.5	1.7	1.0	1.4	1.6	1.7	1.5	1.4	1.5
Autonomy	1	1.8	1.9	1.2	1.7	1.6	1.7	2.0	2.6	1.6
	2	1.8	1.5	1.3	1.7	1.5	1.7	1.8	2.2	1.5
	3	1.7	1.4	1.5	2.2	1.7	2.0	2.2	1.5	2.2
	4	1.8	1.6	1.4	1.8	1.6	1.8	1.7	2.2	2.0
Self-actuali- zation	1	1.9	1.7	1.7	1.8	1.8	2.1	1.7	2.7	1.6
	2	1.9	1.6	1.5	1.8	1.7	1.9	2.4	2.7	1.6
	3	2.1	1.6	1.5	1.9	1.9	1.9	2.3	2.4	1.8
Fay		1.6	1.5	1.4	1.3	1.6	1.7	1.8	2.1	1.3
Information		1.6	1.5	1.3	1.8	1.8	2.2	1.9	2.2	1.8

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $\chi^2 = 16.8$ which with 2 df is significant at the .001 level.

TABLE - 9
MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH
NEED ITEM AS A FUNCTION OF ROLE-SET
DIVERSITY AND TOTAL COMPANY SIZE

Need Category and Item		Role-Set Diversity								
		Low			Moderate			High		
		Total Size			Total Size			Total Size		
		Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Security	1	1.8	1.6	1.5	2.2	1.9	1.4	2.0	1.7	2.1
Social	1	1.6	1.6	1.6	1.3	1.4	1.4	1.6	1.4	1.0
	2	1.2	2.0	2.2	1.2	1.1	1.9	2.0	1.2	1.0
Esteem	1	1.6	1.6	2.1	1.4	2.0	1.6	1.8	1.6	1.8
	2	1.4	1.8	1.5	1.4	1.6	1.6	2.0	1.7	1.1
	3	1.5	1.8	1.5	1.5	1.6	1.5	1.3	1.5	1.0
Autonomy	1	1.5	1.8	1.8	1.7	1.8	1.5	1.8	1.5	1.5
	2	1.4	1.8	1.5	1.7	1.5	1.8	2.0	1.3	1.5
	3	1.8	2.2	1.7	1.7	2.1	1.8	1.7	1.6	1.4
	4	1.8	1.9	1.8	1.7	1.8	1.8	1.5	1.4	1.6
Self-actuali- zation	1	1.7	2.2	2.0	1.7	2.0	1.8	2.1	1.6	1.9
	2	2.0	2.0	2.1	1.8	1.9	2.0	1.4	1.4	1.3
	3	2.0	2.2	2.0	1.8	1.9	1.9	1.7	1.5	1.2
Fay		1.5	1.7	1.6	1.6	1.4	1.5	1.7	1.3	1.8
Information		2.1	1.9	1.8	1.7	1.7	1.8	1.7	1.4	1.4

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has resulted in a $\chi^2 = 8.1$ which with 2 df is significant at the .02 level.

TABLE-10
MEAN NEED FULFILLMENT FOR EACH NEED ITEM
AS A FUNCTION OF ROLE-SET DIVERSITY
AND JOB LEVEL

Need Category and Item		ROLE-SET DIVERSITY								
		Low			Moderate			High		
		Job Level			Job Level			Job Level		
		Top	Middle	Lower Middle	Top	Middle	Lower Middle	Top	Middle	Lower Middle
Security	1	5.1	5.1	5.2	5.4	5.2	5.7	5.3	5.3	5.0
Social	1	4.7	5.5	5.0	5.6	5.3	5.5	5.9	5.5	5.0
	2	4.6	4.5	4.3	4.7	4.5	4.6	4.7	4.6	4.8
Esteem	1	4.1	4.7	4.7	5.0	4.6	4.2	5.2	4.7	4.6
	2	4.5	4.9	4.6	4.9	4.8	4.5	5.1	4.9	4.6
	3	4.5	4.8	4.8	5.2	4.9	5.0	5.2	5.2	4.8
Autonomy	1	4.6	4.7	4.1	5.2	4.8	4.4	5.5	5.0	4.6
	2	5.3	5.1	4.8	5.3	5.0	4.9	5.7	5.2	5.2
	3	4.5	4.9	4.0	5.4	4.9	5.0	5.6	5.4	3.8
	4	4.4	4.8	4.5	5.1	4.9	5.2	5.3	5.2	4.6
Self- actuali- zation	1	4.7	5.3	4.9	5.3	5.0	4.9	5.7	5.1	4.6
	2	4.6	5.0	4.5	5.3	4.9	4.7	5.6	5.2	4.6
	3	4.4	5.1	4.6	5.4	5.0	5.1	5.5	5.3	4.4
Pay		4.8	5.0	4.6	5.1	4.9	4.6	5.2	4.6	4.4
Information		4.2	4.8	4.6	5.1	4.7	4.2	5.3	4.9	4.6

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 31.9$ which with 2 df is significant at the .001 level.

TABLE -11
 MEAN NEED FULFILLMENT EFFICIENCY FOR EACH NEED
 ITEM AS A FUNCTION OF ROLE-SET DIVERSITY
 AS MODERATED BY THE AGE VARIABLE

Need Category and Item		Role-Set Diversity								
		Low			Moderate			High		
		Age			Age			Age		
		20- 39	40- 44	45 and older	20- 39	40- 44	45 and older	20- 39	40- 44	45 and older
Security	1	1.8	2.1	1.6	1.7	1.5	1.4	1.5	1.6	2.2
Social	1	2.4	1.5	1.6	1.8	1.7	1.5	1.1	1.5	2.3
	2	2.3	2.0	1.3	1.6	2.0	1.5	1.7	1.7	2.4
Esteem	1	1.8	1.8	1.3	1.3	1.8	1.5	1.2	1.6	2.4
	2	1.7	1.9	1.9	1.4	1.8	1.4	1.2	1.8	2.4
	3	1.7	1.8	1.3	1.8	2.0	1.3	1.4	1.5	2.8
Autonomy	1	2.3	2.1	1.8	2.0	1.9	1.7	1.3	1.6	1.5
	2	2.2	2.1	1.5	1.9	1.7	1.6	1.4	1.5	2.0
	3	1.9	1.9	1.0	1.7	1.5	1.1	1.8	1.6	1.2
	4	2.7	2.2	1.6	1.8	2.0	1.6	1.4	1.8	1.5
Self- actuali- zation	1	2.0	1.8	1.4	1.1	1.3	1.4	1.3	1.4	1.3
	2	2.4	2.3	1.3	1.8	1.3	1.6	1.0	2.0	2.1
	3	2.0	2.3	1.4	1.6	1.8	1.7	1.4	1.8	1.6
Pay		2.0	1.5	1.7	1.5	1.5	1.3	1.3	1.4	1.9
Information		2.0	2.2	1.7	1.4	2.0	1.4	1.5	1.6	1.8

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $\chi^2 = 28.4$ which with 2 df is significant at the .001 level.

TABLE-12
 MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH NEED
 ITEM AS A FUNCTION OF JOB-RELATED INFORMATION AS
 MODERATED BY MANAGERS' INTEREST IN JOB

Need Category and Item		Job-Related Information								
		Adequate			Sufficient			Inadequate		
		Interest			Interest			Interest		
		High	Moderate	Low	High	Moderate	Low	High	Moderate	Low
Security	1	1.8	1.5	2.1	1.5	1.9	2.1	1.4	1.3	2.5
Social	1	1.8	1.5	2.0	1.4	1.8	2.5	1.4	2.0	2.0
	2	1.9	1.8	1.8	1.6	2.0	2.5	1.6	1.7	2.5
Esteem	1	1.6	1.5	2.0	1.3	1.7	2.3	1.6	1.7	1.5
	2	1.6	1.6	1.5	1.5	1.8	3.2	1.5	1.2	3.0
	3	1.6	1.7	1.8	1.6	2.2	4.5	4.0	1.5	2.0
Autonomy	1	1.8	1.7	2.2	1.6	2.1	2.5	1.6	1.5	2.5
	2	1.6	1.9	1.9	1.5	2.3	2.2	1.2	1.6	3.0
	3	1.5	1.6	1.4	1.3	1.8	1.6	1.7	1.0	1.0
	4	1.9	1.7	2.3	1.7	2.2	2.2	1.5	1.6	1.0
Self- actuali- zation	1	1.3	1.4	1.5	1.5	1.5	1.8	1.0	1.7	2.0
	2	1.4	1.7	1.8	1.5	1.6	1.2	1.0	1.6	1.0
	3	1.7	1.7	1.8	1.7	1.9	2.2	1.2	1.0	1.5
Pay		1.4	1.6	1.8	1.6	1.4	1.8	1.7	1.7	2.0
Information		1.6	1.9	2.1	1.3	2.1	2.3	1.5	1.5	1.5

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $\chi^2 = 13.1$ which with 2 df is significant at the .001 level.

TABLE-13
 MEAN NEED FULFILLMENT FOR EACH NEED ITEM
 AS A FUNCTION OF ROLE-SET DIVERSITY AS
 MODERATED BY THE MANAGERS' SENIORITY

Need Category and Item		Role-Set Diversity								
		Low			Moderate			High		
		Seniority			Seniority			Seniority		
		1-10	10-20	20 or More	1-10	10-20	20 or More	1-10	10-20	20 or More
Security	1	4.3	4.6	4.3	4.5	4.6	4.8	5.1	4.9	4.8
Social	1	4.5	4.4	4.6	4.6	4.8	4.8	5.5	5.3	5.0
	2	5.1	5.0	5.1	5.1	5.0	5.1	5.9	5.2	5.4
Esteem	1	4.9	4.7	4.7	4.5	4.7	4.8	5.2	4.8	5.2
	2	5.2	4.9	5.1	4.7	5.0	5.2	5.7	5.2	5.4
	3	5.2	4.8	5.2	4.7	5.4	5.3	5.8	5.6	5.5
Autonomy	1	4.7	4.6	5.2	4.7	5.1	4.9	5.6	5.1	5.7
	2	4.8	4.7	4.3	4.4	5.2	5.1	5.6	5.2	5.5
	3	4.8	4.8	4.5	4.6	4.8	5.2	5.2	5.3	5.5
	4	4.8	5.0	4.9	4.7	5.1	5.0	5.4	5.2	5.6
Self- actuali- zation	1	5.4	5.2	5.4	5.2	5.4	5.6	6.3	5.6	5.5
	2	3.8	4.5	4.7	4.1	4.6	4.6	5.2	4.3	5.1
	3	5.0	4.4	4.4	5.0	5.0	5.2	5.2	5.6	5.1
Pay		5.0	4.9	4.8	4.5	4.9	5.1	4.8	5.1	4.5
Information		5.0	4.6	4.4	4.3	4.8	4.9	4.8	4.9	5.2

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $\chi^2 = 11.2$ which with 2 df is significant at the .01 level.

TABLE-14
 MEAN NEED FULFILLMENT FOR EACH NEED ITEM
 AS A FUNCTION OF JOB-RELATED INFORMATION
 AS MODERATED BY THE AGE VARIABLE

Need Category and Item		Job-Related Information								
		Adequate			Sufficient			Inadequate		
		Age			Age			Age		
		20- 39	40- 44	45 and older	20- 39	40- 44	45 and older	20- 39	40- 44	45 and older
Security	1	4.5	4.7	4.9	4.4	4.5	4.6	3.9	4.2	4.4
Social	1	4.6	4.9	5.0	4.7	4.8	4.8	4.2	4.2	3.2
	2	5.2	5.1	5.5	5.0	4.7	5.1	4.8	5.0	4.8
Esteem	1	4.5	4.9	5.2	4.7	4.6	4.7	4.5	4.1	4.8
	2	5.1	5.1	5.3	5.1	4.8	4.9	5.4	4.9	4.2
	3	5.4	5.3	5.6	4.8	5.1	5.1	5.3	5.2	4.8
Autonomy	1	5.0	5.0	5.4	4.9	4.5	4.8	4.7	4.6	4.1
	2	5.3	5.0	5.6	5.0	4.6	5.2	5.3	4.6	4.4
	3	4.7	4.8	5.3	4.5	4.6	5.0	4.7	4.5	5.4
	4	5.0	5.0	5.4	4.8	4.8	5.1	4.8	4.3	4.6
Self- actuali- zation	1	5.5	5.6	5.6	5.1	5.2	5.4	5.1	5.2	4.5
	2	4.5	4.6	4.6	4.0	4.3	4.6	4.6	4.0	4.8
	3	4.8	5.3	5.4	5.1	4.5	5.0	4.4	4.2	3.4
Pay		4.4	4.9	5.1	4.9	4.8	4.8	4.6	4.8	5.5
Information		4.8	5.1	5.2	4.8	4.3	4.6	4.4	4.4	3.8

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means produced a $\chi^2 = 11.5$ which with 2 df is significant at the .01 level.

TABLE-15
 MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH
 NEED ITEM AS A FUNCTION OF TOTAL COMPANY
 SIZE AS MODERATED BY THE AGE VARIABLE

Need Category and Item		Total Company Size								
		Small			Medium			Large		
		Age			Age			Age		
		20- 39	40- 44	45 and older	20- 39	40- 44	45 and older	20- 39	40- 44	45 and older
Security	1	1.1	1.8	1.6	1.8	1.6	1.4	2.2	1.7	2.5
Social	1	1.4	1.7	1.8	2.0	1.6	1.7	2.1	1.5	1.8
	2	1.4	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.4
Esteem	1	1.2	1.6	1.5	1.7	2.0	1.3	1.3	1.9	1.6
	2	1.2	2.0	1.7	1.5	1.9	1.5	1.6	1.6	2.0
	3	1.7	2.1	2.1	1.5	1.8	1.4	1.7	1.4	2.1
Autonomy	1	1.5	2.0	1.8	2.2	1.6	2.0	2.2	2.1	1.9
	2	1.6	1.7	2.0	2.4	1.9	1.7	1.6	1.8	1.7
	3	1.5	1.7	1.3	1.8	1.8	1.0	2.0	1.4	1.2
	4	1.6	2.2	1.7	2.1	1.8	1.8	2.1	2.0	2.1
Self- actuali- zation	1	1.4	1.5	1.5	1.5	1.2	1.6	1.5	1.7	1.3
	2	1.7	1.4	1.6	1.7	2.1	1.4	2.5	1.5	2.3
	3	1.2	1.9	1.5	2.0	2.1	1.7	2.0	1.8	1.8
Fay		1.3	1.7	1.7	1.6	1.3	1.6	1.8	1.4	1.7
Information		1.5	1.9	2.0	1.7	1.9	1.5	1.6	2.0	2.3

The chi square test applied on the plus and minus totals of the number of changes of the size of the above means has produced a $X^2 = 8.7$ which with 2 df is significant at the .02 level.

TABLE-16
 MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH NEED
 ITEM AS A FUNCTION OF ORGANIZATIONAL STRUCTURE
 AS MODERATED BY THE AGE VARIABLE

Need Category and Item		Organization Structure								
		Flat			Intermediate			Tall		
		Age			Age			Age		
		20- 39	40- 44	45 and older	20- 39	40- 44	45 and older	20- 39	40- 44	45 and older
Security	1	1.7	1.6	1.6	1.7	1.7	1.8	2.0	1.8	1.7
Social	1	2.3	2.0	1.7	1.7	1.6	1.6	2.2	1.4	2.4
	2	1.5	2.4	2.2	1.8	1.9	2.0	2.2	1.8	2.2
Esteem	1	1.1	1.6	2.0	1.5	2.0	1.3	1.8	1.5	1.3
	2	1.3	1.6	1.8	1.4	1.9	1.7	2.0	1.8	1.6
	3	1.5	2.0	1.6	1.6	1.9	1.8	2.0	1.4	2.0
Autonomy	1	2.1	1.9	1.9	1.8	1.8	1.8	3.0	2.1	2.0
	2	1.4	2.0	1.7	1.7	1.8	1.8	3.0	1.7	2.1
	3	1.3	1.6	1.1	1.9	1.7	1.2	1.2	1.6	1.3
	4	1.8	1.8	1.5	1.9	2.0	1.9	2.7	2.3	2.2
Self- actuali- zation	1	1.2	1.7	1.6	1.3	1.4	1.5	2.4	1.5	1.4
	2	1.0	1.5	2.2	2.1	1.5	1.5	2.3	2.5	1.8
	3	2.0	2.4	1.6	1.6	1.9	1.5	1.6	1.9	1.9
Pay		1.7	1.5	1.5	1.6	1.5	1.7	1.4	1.5	1.9
Information		1.7	1.9	2.1	1.6	1.8	1.8	1.6	2.2	2.1

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 10.3$ which with 2 df is significant at the .01 level.

TABLE-17
MEAN NEED FULFILLMENT DEFICIENCIES FOR EACH
NEED ITEM AS A FUNCTION OF JOB LEVEL AS
MODERATED BY THE AGE VARIABLE

Need Category and Item		Job Level								
		Top			Middle			Lower Middle		
		Age			Age			Age		
		20- 39	40- 44	45 and older	20- 39	40- 44	45 and older	20- 39	40- 44	45 and older
Security	1	1.4	1.8	1.8	2.0	1.6	1.8	1.7	2.1	1.7
Social	1	1.1	1.7	1.8	1.1	1.6	1.4	1.6	1.6	1.5
	2	1.0	1.5	2.0	2.3	1.5	1.4	2.1	1.7	1.7
Esteem	1	1.5	1.7	1.3	1.8	1.6	1.8	1.8	1.9	1.8
	2	1.1	1.7	1.6	1.5	1.6	1.4	1.6	2.1	1.4
	3	1.6	1.6	1.1	1.8	1.3	1.2	1.8	2.2	1.5
Autonomy	1	1.5	1.5	1.7	1.6	1.5	2.0	2.1	1.8	1.7
	2	1.1	1.6	1.7	1.3	1.3	1.7	1.7	2.3	1.7
	3	1.6	1.9	2.1	2.0	1.6	1.6	2.1	1.8	1.5
	4	1.5	2.0	1.7	1.5	1.8	1.7	1.8	2.0	1.5
Self- actuali- zation	1	1.5	1.8	2.0	1.3	1.7	2.0	2.1	2.2	2.1
	2	1.5	2.0	2.2	1.6	1.6	1.7	2.3	2.2	1.9
	3	1.6	2.0	1.7	1.9	1.6	1.6	2.1	2.3	2.0
Pay		1.3	1.5	1.3	1.5	1.5	1.8	1.6	1.5	1.8
Information		1.1	1.9	2.3	1.1	1.7	1.6	1.8	2.1	1.8

The chi-square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $\chi^2 = 7.1$ which with 2 df is significant at the .02 level.

TABLE-18
 MEAN NEED FULFILLMENT FOR EACH NEED ITEM AS A
 FUNCTION OF ROLE-SET DIVERSITY AS MODERATED
 BY MANAGERS' INTEREST IN JOB

Need Category and Item		Role-Set Diversity								
		Low			Moderate			High		
		Interest			Interest			Interest		
		High	Moderate	Low	High	Moderate	Low	High	Moderate	Low
Security	1	4.7	4.7	4.9	4.2	4.6	4.8	4.5	4.5	4.6
Social	1	4.6	4.8	5.1	4.3	4.7	5.2	5.0	5.1	5.2
	2	5.2	5.1	5.5	4.9	4.9	5.0	5.0	5.2	4.4
Esteem	1	4.9	4.8	5.1	4.5	4.6	4.7	4.8	4.8	4.8
	2	5.2	5.0	5.4	4.8	5.0	5.1	5.1	5.1	5.8
	3	5.3	5.3	5.2	4.9	5.5	5.2	5.1	5.0	6.0
Autonomy	1	5.0	5.1	5.4	4.4	4.7	5.1	5.1	5.5	5.2
	2	4.9	5.0	5.3	4.2	4.9	5.4	5.4	5.1	5.6
	3	4.9	4.9	5.2	4.4	4.9	5.3	4.3	5.2	5.4
	4	5.0	5.1	5.3	4.5	4.8	5.0	5.5	5.0	5.6
Self-actuali- zation	1	5.5	5.4	5.7	4.9	5.3	5.5	5.3	5.2	5.4
	2	4.5	4.5	4.9	4.4	4.6	3.9	4.6	4.1	4.4
	3	4.8	4.9	5.1	4.4	4.9	5.3	5.1	5.5	5.6
Fay		5.0	4.9	4.9	4.7	4.7	4.6	4.5	4.8	4.2
Information		4.7	4.7	5.0	4.5	4.6	5.2	5.1	4.8	4.4

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 6.2$ which with 2 df is significant at the .05 level.

TABLE-19
 MEAN NEED FULFILLMENT FOR EACH NEED ITEM
 AS A FUNCTION OF JOB LEVEL AS MODERATED
 BY MANAGERS' SENIORITY

Need Category and Item		Job Level								
		Top			Middle			Lower Middle		
		Seniority			Seniority			Seniority		
		1-10	10-20	20 or more	1-10	10-20	20 or more	1-10	10-20	20 or more
Security	1	5.2	4.8	5.2	5.0	4.8	3.3	3.9	4.6	4.5
Social	1	5.7	5.0	5.5	4.0	4.7	3.5	4.0	4.7	4.5
	2	5.8	5.3	5.8	4.8	5.3	3.6	4.6	4.7	4.8
Esteem	1	5.3	4.7	5.3	5.0	4.5	4.1	4.6	4.5	4.7
	2	5.6	5.2	6.1	4.2	5.1	5.0	4.7	4.6	4.9
	3	5.7	5.3	5.5	5.4	5.0	5.1	4.9	5.2	5.2
Autonomy	1	5.7	5.2	5.6	4.2	5.1	4.1	4.6	4.6	5.0
	2	6.0	5.1	5.7	3.6	5.0	3.1	4.3	4.9	4.6
	3	5.0	5.4	5.0	5.0	5.0	3.8	4.6	4.6	5.0
	4	5.6	5.0	5.3	4.8	5.5	4.1	4.6	4.8	5.0
Self- actuali- zation	1	6.5	5.4	5.8	5.6	5.0	5.0	5.1	5.4	5.4
	2	4.8	4.7	4.8	3.6	4.8	4.8	4.0	4.4	4.7
	3	5.3	4.6	5.6	4.2	5.0	4.8	4.8	5.0	4.6
Pay		4.8	4.5	5.5	5.4	4.7	4.6	4.5	4.6	4.6
Information		5.6	4.5	5.2	5.0	5.0	3.6	3.8	4.5	4.5

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 10.2$ which with 2 df is significant at the .01 level.

TABLE-20
 MEAN NEED FULFILLMENT FOR EACH NEED ITEM
 AS A FUNCTION OF JOB LEVEL AS MODERATED
 BY MANAGERS' EDUCATION

Need Category and Item		Job Level								
		Top			Middle			Lower Middle		
		Education			Education			Education		
		1-12	12-16	16 or more	1-12	12-16	16 or more	1-12	12-16	16 or more
Security	1	5.0	4.8	5.0	4.8	4.8	4.8	5.0	4.4	4.1
Social	1	5.1	5.1	5.2	5.1	5.0	5.2	5.0	4.5	4.1
	2	5.4	5.1	5.6	5.4	5.4	5.4	5.7	4.8	4.4
Esteem	1	5.4	5.5	5.3	4.8	5.2	5.6	5.7	4.7	4.6
	2	5.1	5.3	5.3	5.4	5.3	5.3	5.8	5.0	5.3
	3	5.8	5.1	5.2	5.2	5.1	5.4	6.0	4.6	4.2
Autonomy	1	5.0	5.2	5.4	4.6	5.1	5.4	5.0	4.8	4.6
	2	5.2	5.0	5.0	5.4	5.0	5.0	4.8	4.7	4.7
	3	5.9	5.0	5.4	5.4	5.3	5.3	5.6	4.8	4.5
	4	5.6	5.4	5.6	5.2	5.4	5.7	6.0	5.1	5.2
Self- actuali- zation	1	5.6	5.4	5.6	4.7	4.4	4.7	4.6	4.5	4.2
	2	4.8	4.9	4.2	4.9	4.9	5.3	4.9	4.8	4.5
	3	4.7	4.9	5.2	5.4	5.0	5.2	5.2	4.5	4.6
Pay		5.1	5.0	5.2	5.4	5.0	5.2	6.1	4.4	4.1
Information		4.8	4.9	5.3	5.0	5.1	5.0	5.4	4.6	4.2

The chi square test applied on the plus and minus totals of the number of changes in the size of the above means has produced a $X^2 = 20.0$ which with 2 df is significant at the .001 level.

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