San Fernando Valley State College

PERCEIVED NEED SATISFACTIONS OF RECENTLY
GRADUATED ENGINEERS AND BUSINESS STUDENTS

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Science in Business Administration by David Douglas Carpenter

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ABSTRACT

PERCEIVED NEED SATISFACTION OF RECENTLY GRADUATED
ENGINEERS AND BUSINESS STUDENTS

by
David Douglas Carpenter

Master of Science in Business Administration

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This paper reports the findings and conclusions of a study conducted to determine the perceived needs satisfactions of recently graduated Engineering and Business students working in business, industrial and government organizations. The study was conducted through use of a questionnaire answered by the respondents. This questionnaire was designed to rate perceived need satisfactions of the respondent. These ratings were analyzed for a significant statistical difference between respondents in varying organizational parameter categories.

A concise review of some past research in the behavioral science field is presented to familiarize the reader with these works and their import. This review begins with Maslow's theory on need hierarchy, discusses research and theories of Argyris, Gellerman, Katz, Morse, Herzberg, Schaffer, Meyers, and Porter. This review aids in the understanding of this study and provides some contrasting and compatible areas from which this study can be viewed.

The conclusions of this study indicate that there is no significant relationship between organizational or job parameters and the need satisfactions received by the respondents on their job.
CHAPTER I

INTRODUCTION

The Nature of the Problem

Businessmen, educators and writers have expressed concern over the past several years about the attitude of the recently graduated college students toward selecting a business career. John Cunniff, AP Business News Analyst, wrote in his column in December, 1966, "... many businessmen have been shocked lately by the attitude of college seniors who spurn business careers." He states that the graduate today has a wide choice of job opportunities and that he is ready to question whether business provides the best of the lot. He asserts that the college graduate demands more from his job than just money; he wants a challenging job where he can benefit society and his fellow man and he believes that jobs with this context are found in non-business organizations.

One of the foremost writers in the management field, Peter Drucker, states that there is a distinct shift of graduates from

business to government careers. He presents several facts that are causing this shift:

1. Government pay has increased and now matches business pay.

2. The government is presently switching to knowledge type work, a switch that industry had essentially completed a decade ago.

3. The business jobs, oriented to this knowledge type work, are filled with people in their 30's, therefore the graduate has limited promotional opportunities.

4. Business is trying to sell itself to the undergraduate market, whereas it should be attempting to reach the graduate student.

5. Trainee programs in business tend to make jobs uninteresting and unchallenging to individuals who desire great challenge and are ready to work, not attend more school.

In yet another article, this one stating that many graduates continue to seek business careers, several points are made concerning the weakening business position to obtain the graduate:2

1. Young people today do have new, different and -- to their seniors -- often annoying feelings about business and their


role in it.

2. An increasing number of college students display an intense desire to be of service to society. This is leading many into fields like teaching, government and social work.

3. Many students take a critical, sneering attitude toward business.

4. A very high percentage of students in Ivy League and other selective institutions are headed into the professions.

The reasons for many graduates' attitude toward business seem to be clouded by idealism, myths, ambitions, logic, and lack of experience. The writers tend to place heaviest emphasis upon two causes of this attitude: first, the sociological ones of rapid technical change, financial security, and world condition insecurity; second, unfavorable feedback of information to the campus from former, less than pleased, graduates, now working in business.

Analysis of these causes suggests that many graduates think they must serve society through the best means that they can; that they will not satisfy this yearning through a business career; that they do not have to rely on business for financial security; and that unsatisfied alumni, in business careers, fortify their beliefs.

Therefore, we can state that many graduates do not believe that they would be satisfied with jobs in some organizations and, conversely, would receive higher job satisfaction in other organizations. Job satisfaction, as used here, does not necessarily imply job happiness, rather the fulfillment of the feeling that one is
in a place to contribute to his society; that, in this place, he
is accomplishing the things he does best; and that he receives
recognition from this society for what he is doing.

**Hypothesis**

Since many graduates believe that certain organizations
provide greater job satisfaction than others, I propose the fol-
lowing hypothesis: That there is a significant difference in per-
ceived need satisfactions of recently graduated Engineering and
Business students which can be attributed to different job class-
ifications and/or to the influence of organizational variables.

**Definitions**

*Significant Difference* - A statistical measure of the difference
between the mean values of two samples. Through the use of the
Aspin-Welch test, a determination can be made as to whether the
difference between two sample means is caused by a difference in
the two samples or solely by the expected statistical variance in
two like samples.

*Perceived Need Satisfaction* - A subjective measure of need satis-
faction felt by the respondent for the need categories defined by
Maslow's need hierarchy.¹

*Recent College Graduates* - Individuals, male or female, who have

1954), pp. 80 - 98.
graduated from college or university with a bachelor, master or doctoral degree in Engineering or Business during the calendar years 1964, 1965, 1966 and are employed full-time.

Job Categories - A division of positions into classes such as engineering, accounting, marketing, production, and personnel.

Organizational Variables - A broad classification of organizations by their size and type of output, i.e., manufacturing, research and development, transportation, public utilities, wholesale and retail trade, finance, insurance and real estate, and government.

Importance of the Study

As discussed earlier, there is an increasing conviction by many college graduates that the amount of satisfaction they can expect to derive from their work will depend largely upon the organization for which they chose to work. Most of the prior studies on satisfactions received at the work place, or job satisfactions, have centered on the structure of the job, the influence of supervision, company policy, co-worker relationships, and other factors which can be defined as job-oriented. Now, we find highly-renowned authors reporting that college graduates are selecting a work place with criteria based on the effect an organization may have upon society. These factors are organization or environment-organization oriented. If the hypothesis is proven, and this study does link certain environment-organization oriented variables to individual job satisfaction, then further research should be conducted to determine the relative strength of the job-oriented variables.
versus organization-oriented variables.

This study will probe for differences in the perceived need satisfactions of individuals which can be attributed to organizational variables. If a significant difference in these need satisfactions is discovered between organizational variables, several factors will be known. First, that the graduate is correct in his anticipation that satisfaction varies between organizations. Second, that studies on job satisfaction must be broadened to include organizational variables. To date, most studies in this field have surveyed the participants in an organization and concluded that job satisfactions varied due to such things as promotions, the work itself, control over one's work, and other job-oriented factors, and that these factors were constant for all organizations. This study would not refute any of these past findings; rather, it would indicate that other, more encompassing factors also affect one's satisfaction on the job.

Organization of the Study and Report

The study was divided into three major phases. First, the organizations were selected to participate in the survey. Second, the participants within the selected organizations responded to the questionnaire. And, third, the job satisfaction ratings from the respondents were tabulated and analyzed.

Selection of organizations to participate was done in a manner to assure a high degree of randomness and thus result in a more diverse cross-section of the population. Business organizations
were selected from the listing of the 500 largest U.S. corporations in *Fortune*¹. Using a random number table, the organizations were selected that had a number in the list corresponding to that obtained from the table. Government organizations were selected in a similar manner, except that the random number corresponded to the page number of the United States Government Organization Manual.² A letter was sent to each organization selected asking for its permission to allow some of their employees to participate in the survey.

Those organizations returning a positive response were sent the questionnaires to be distributed to their employees. The employees then returned the completed questionnaires. The job satisfaction ratings were analyzed by category, and the results tabulated.

The report is divided into three chapters in addition to this introductory chapter; these are:

II. Job Satisfaction and Organizational Demands

III. The Method of Conducting the Study

IV. Conclusions and Testing the Hypothesis


CHAPTER II

JOB SATISFACTIONS AND ORGANIZATIONAL DEMANDS

Introduction

This chapter will acquaint the reader with some basic ideas on organization theory, organization composite, the motivation and satisfaction of the participants in organizations, and provide a short review of past research studies and literature in the field of human behavior in an organizational environment. Complete coverage of the field of theories and research is not intended; rather, only salient points, to enhance the reader's understanding of the thesis, will be presented. The field of study involving people, their action and interaction within organizations, is much too large to give adequate coverage in a paper of this magnitude. If the reader desires additional knowledge concerning this subject, several books providing an excellent summary are recommended: (1) Organizational Behavior, Philip B. Applewhite; (2) Motivation and Productivity, Saul W. Gellerman; (3) Organizational Psychology, Edgar M. Schein.

This chapter will be divided into two sections: Organizations; and Behavior and Motivation in Organizations.
Organizations

Organizations are generally created to achieve certain goals common to the participants of those organizations that can best be met collectively. They are open systems with inputs, internal processes, outputs and generally some corrective feedback systems. These systems function within an environment, or larger system, which influences to some extent the input and output. This study is concerned with the system's inputs and internal processes. Included within this category of organizational inputs is energy, both mechanical and human. Human energy may be categorized into primarily physiological and psychological compositions. The main concern of this paper is with psychological energy produced by the participants while functioning within the organizational context.

These energies arranged as inputs to the organization must be directed by the internal processes to achieve the organizational objectives. To accomplish this direction, the organization is divided into several parts or units. These parts are integrated in a particular sequence or pattern of authority relationships designed to achieve the objectives. The resulting pattern constitutes the organization structure. This pattern is called the intended, or formal, organization structure and it is simply a static picture of the plan devised by the organization's creators.

2 Ibid, p. 20.
Formal Organization

The so-called formal organization structure is usually designed with certain "scientific-management" principles in the minds of its architects. Each unit is neatly placed in its own defined area of responsibility and authority. Each unit is responsible to a unit of higher authority for the successful accomplishment of its tasks. This hierarchy of command continues from lowest levels to the highest level of President, Chairman of the Board, proprietor, Bishop, Cardinal, or whoever. Through this means, the total organization attains the required cooperation from individuals to achieve its objectives. For, as Chester I. Barnard emphasized, human beings are forced to cooperate to achieve their personal goals.¹

This cooperative effort is more efficient when administered through some kind of formal organization.

The design of most formal organizations follows several basic principles:

1. **Unity of command** - one individual or one group of individuals shall be responsible to only one higher authority person or unit.

   (2) **Span of Control** - the number of persons, groups, units or physical assets managed by one person or unit must be limited to a manageable span. Students of management have, to date, been unable to determine a definite number of persons

or an applicable formula for determining the correct number. As can be easily seen, this number will vary depending upon the personalities and capabilities of both the manager and the managed, the complexity of work, the amount of freedom the managed are allowed in determining their course of action, and so on.

(3) **Specialization of functions** - the units into which the various organizational tasks are segmented are established by placing like tasks together. Each unit is responsible for its particular specialized segment, and as the units are placed further down the chain of command, their tasks become more specialized. For example, the vice president of manufacturing may have several divisions under his direction, one of which is Work Standards. Work Standards may have a Methods, Time Study, Timekeeping and Industrial Engineering department reporting to it. The Time Study department may be divided into Fabrication, Sub-Assembly, Paint, and Final Assembly branches, with each branch being specialized in its functional area. Thus, the further an organizational unit is from the point of final responsibility, the more specialized its tasks become.

These three principles provide the framework to design an organization. The unity of command establishes the authority relationships for each unit; the span of control fixes the width as well as the breadth of the structure; and specialization of functions determines the number of sub-divided units required.
Following these principles, the architects of the organization structure can develop an efficient structure with its individual units and authority lines depicted on an organizational chart. But the student of management finds another structure from the one described above if he analyzes a functioning organization. This structure, known as the informal organization, was first given scientific credence by Elton Mayo in his famous Hawthorne studies. These studies found that workers developed their own structures within the framework of the formal organization.

Informal Organizations

Since Mayo's studies, nearly every theorist in human relations has used him either as a springboard or as a foil against which to develop contrasting ideas of his own. The theory which he evolved states that workers tend to cluster together into informal groups in order to fill a void in their lives. This void results from a basic need for cooperation and comradeship which the modern industrial organization has ignored. He found that these informal groups exerted a far stronger influence on the workers' motivation than the combined strength of money, discipline and job security provided by the formal organization.

Subsequent studies and research into these groups unveiled a new area of social research named group dynamics. These studies have found that, in any organization, we do not have the clean-cut sterile atmosphere that the chart of a formal organization structure might reveal. The organization, in reality, has groups
that cross between units of the formal structure; authority lines that are hardly as bold and straight; conflicts between individuals and between groups; and individual personalities that cause many varying reactions to the organizational environment.

The intensive study of these groups by social researchers has disclosed the factors that allow them to exert such a dominant force over worker motivation and productivity. A group is defined as a plurality of individuals who are in contact with one another, who take one another into account, and who are aware of some significant commonality. The most significant point in this definition is that neither physical adjacency nor common interest alone make a group. As an example, people standing outside a tiger cage have both common interest and physical adjacency, but they do not believe that they have a significant commonality, nor are they taking one another into account. This commonality and the taking of each other into account is expressed as the goals and norms of the group and the interpersonal relations of those members.

The group goals are those things that the group and its members strive to attain. In an industrial setting, an informal group's goals may include playing a card game during coffee break, swapping jokes at lunch, slowing down or increasing production output, and providing a feeling of belonging to its members. All goals that are held by the group need not be held by each member equally. Some members may enjoy cards more than jokes, but they contribute to the jokes, so that they are not left out on the cards. This example points up one of the most interesting facets of group
dynamics, that is interaction. Interaction between the group and the individual participant develops because the individual needs social support for his values and social beliefs; he needs to be accepted as a valued member of some group which he values; failure to maintain such group membership produces anxiety and personal disorganization. But, on the other hand, group membership and group participation tend to cost the individual his individuality. If he is to receive support from others, he and they must hold in common some values and beliefs. Deviation from these undermine any possibility of group support and acceptance.

The complex relationship explained above concerns the acceptable behavior of members in a group. This behavior is termed group norms, and outlines the pattern of ideals held collectively by the group. These ideals are formulated by a conglomeration of the ideals held by each member. Every person has his own idiosyncratic ideals that he formulates from his own experiences throughout his lifetime. These idiosyncratic ideals plus the expectations of the group in which he is participating plus the expectations of all other groups in which he participates equal the individual's personal norms. The sum of these for all members of the group formulate the group norms.

Group norms are shared because the potential gratification that the group can provide the member outweighs the inherent disadvantages of group membership. Methods employed by groups to enforce their norms vary as to the function, structure and formality of the group. Some have formal rules and regulations, others
depend upon conformance through social pressures. Conformance to group norms has provided several interesting studies, one of which is the influence the group has upon the member's perception. Experiments made with groups of individuals which included one "naive subject" and the other members as "accomplices" selecting an incorrect answer found that, in many instances, this group pressure caused the naive subject to answer incorrectly also. Further experiments in varying the size of the majority found that if the naive subject had one other member who selected his choice, the group pressure effect of the majority was destroyed and he would give the correct answer.¹

This discussion on informal group structure and dynamics points out the many factors affecting each person in our organizations. The individual must be viewed in this environment where many forces cause him to act in the manner he does, and not as a block on an organization chart, if he is to be understood, positively motivated and allowed to perform competently.

**Organizational Impact**

Chris Argyris, of Yale University, has written several books concerning the effect of organizations, particularly industrial,

upon the individuals working in them.\footnote{For reference see:}

\begin{itemize}
\end{itemize}

He has found that most organization policy tends to collide head-on with the natural growth patterns of the individual. Most organizations, especially at the lower levels, leave little leeway for choosing, using discretion, or adapting policy to fit the situation. The individual is directed by the budget, the standard operating procedures, and other restrictions into selecting the proper path to follow, and this path many times leads 180 degrees away from the direction the man desires to follow.

Argyris finds that the healthy, mature adult does not fit into this directive, unyielding environment; and this produces frustration with its undesirable (to the goals of the organization as well as to the individual) reactions, i.e., apathy, passiveness, anger and unrealistic perception. He does not solely point the need for organizational change to the improvement of the individual participant's mental health, but also to the anticipated increase in organizational effectiveness as the inherently creative, highly motivated man is released from his bonds. Argyris also points out that not all adults are mature, in fact, not even a majority are,
and that the regimented, restricted, and repetitious way of life is made to order for them. But the number of mature adults continues to increase, and if one studies our society and culture over the past twenty-five years, he finds that the young people raised in this era are less dependent, better educated, more aware of themselves and their surroundings -- in other words, more mature -- than their parents were at the same point in life. So we find an ever increasing need to review our organization structures to release these mature individuals from restricting bonds.

Argyris attributes three mechanisms in the modern organization to this climate -- organization structure, directive management, and management controls. The organization structure concentrates power in a relatively few hands and leaves the man at the lower end of the structure with nothing to do but follow very explicit directions to accomplish his specialized function. He claims that this is undesirable not only from the man's position, but also because it produces apathy and inflexibility which decrease organizational effectiveness. Directive management refers to the traditional style of supervision where the boss makes all the decisions and his subordinates carry them out. This allows little freedom for the mature adult to affect his environment and again leads to frustration. Managerial controls, such as budgets, time and motion studies, and incentive systems, limit the flexibility of the organization managers to perform as they feel appropriate. Although these controls are meant as "guidelines", they
actually prevent a lot more than just excesses; they dampen ingenuity and even common-sense. Thus, the very mechanisms that have been established to increase effectiveness of organized people, in reality, are causing people to act in a less effective manner than they are capable. Of course, Argyris freely admits that some controls, direction, and restrictions must be placed in the organization to allow for consistent, defined attainment of goals. Therefore, we should be striving for a position of less controls and more independent initiative, but not a complete void of them, which would lead to chaos.

**Behavior and Motivation in Organization**

Within the organizational framework, what factors lead to motivating the individual participant? Why do we, as participants, behave as we do? Why are some people motivated negatively and others positively towards the organization's goals? The previous section has described the atmosphere within which our subject is to be viewed. Now it is in order to review the findings of researchers who have analyzed man in his environment and discovered some of the keys that unlock man's true, creative potential.

**The Needs of Man**

Man is classified as an animal, but he differs from lower level animals in his ability to adapt to changes in his environment. Most rely heavily on instinctual responses to survive, whereas the human brain is considerably freer to adjust to the environment,
since only a small portion of the nervous system is devoted to instinct. This adaptability in human behavior leads to the complex being that man is. Lower level animals have a built-in response to hunger and they instinctively attempt to satisfy their hunger. Now some animals have been taught that other cues, such as ringing of a bell, signify a dissatisfied hunger need and they respond to these cues as if they were actually hungry. Man, on the other hand, has a more complex hunger drive. He impulsively seeks food when hungry, but his responses beyond this are more involved than those of the animal. If man is not starving, a case which fits the individuals being studied herein, and he does not worry over loss of food availability, his desire for food becomes more sophisticated. He searches for specially prepared foods, served in pleasant surroundings by a pretty young waitress in a bunny costume.\(^1\) The need for food then becomes secondary to another need, which can cause frustration if not fulfilled.

The foregoing example points out the complex nature of man's needs. Satisfaction of one need does not provide satisfaction to the entire human system for a very long period. After some of the more basic needs are satisfied, man then becomes dissatisfied with other needs. A. H. Maslow clearly defined this continual satisfaction, dissatisfaction progress of needs in his book, *Motivation and* 

Personality, as the "Need Hierarchy." His theory was that man had a series of needs that could be broadly categorized into physiological or security, social, esteem, and self-actualization needs. As man satisfied his basic physiological needs he then became dissatisfied with the fulfillment of his social needs and so on up the "need hierarchy."

The basic needs of food and water are the most prepotent of all needs. A human being who is missing everything in life in an extreme fashion is most likely to seek food before he seeks for safety, love and esteem. His entire philosophy would hinge around the requirement for food. If only he would be guaranteed food for the remainder of his life, he would be perfectly satisfied. But this does not occur in reality, for when a man has sufficient food "at once other (and higher) needs emerge and these, rather than physiological hungers, dominate the organism. And when these in turn are satisfied, again new (and still higher) needs emerge, and so on."

The participants in this survey, and for that matter throughout most of our country, do not lack satisfaction with the physiological and security needs. They have sufficient food, shelter and


2 Ibid., p. 82.

3 Ibid., p. 83.
protection from undesirable elements, therefore they are concerned with the higher level needs of social, esteem, and self-actualization.

The social needs or requirement for love has been studied by many clinical researchers, and many cases are available discussing the effects of a lack of love. In the industrial organization these needs are partially fulfilled by the informal group providing fellowship for its members.

All people have a requirement for a stable, firmly based, usually high evaluation of themselves. "Satisfaction of the self-esteem need leads to feelings of self-confidence, worth, strength, capability and adequacy of being useful and necessary in the world. But thwarting of these needs produces feelings of inferiority, of weakness, and of helplessness."\(^1\)

The last needs in the hierarchy are those of self-actualization which require that what a man can be, he must be. A musician must make music, an artist must paint, a poet must write poetry, if he is to be ultimately at peace with himself. The emergence of these needs usually rests upon prior satisfaction of the lower level needs.

Maslow does not state that by satisfaction of a lower level need and the emergence of a higher level need, the lower level need is satisfied 100 percent. Instead he describes the hierarchy in

\(^{1}\text{Ibid}, p. 91.\)
terms of decreasing percentages of satisfaction as we go up the hierarchy. Thus, the average citizen would be satisfied 85 percent in his physiological needs, 70 percent in his safety needs, 50 percent in his love needs, 40 percent in his self-esteem needs, and 10 percent in his self-actualization needs. Also, emergence of higher level needs is not a sudden phenomenon, but rather a gradual uncovering from nothingness.¹ Man, through the media of satisfying these needs is motivated to behave as he does. Due to his continual unsatisfied gratification of certain needs, man will always be motivated to behave in a manner that he perceives as increasing his gratification.

**Behavior and Motivation**

All behavior is motivated, or is it? Maslow presents a case for distinction between behavior that is the resultant of seeking need gratification and that which is expressed in nature. He states that American psychology is overly concerned with purposeful behavior and neglects such behavior as fun and gaiety, leisure and meditation, loafing and puttering, aimless, useless, purposeless activity.² Without belaboring this point, and without casting any doubts on Maslow's theory, it will suffice that the behavior this research contemplates studying is motivated and we are not concerned with expressive behavior.


Several excellent studies on job satisfactions, motivations, behavior and productivity have been conducted in the past. Two of the earliest were *Production, Supervision, and Morale in An Office Situation*, written in 1950\(^1\) and *Satisfactions in the White Collar Job*, written in 1953.\(^2\) Later studies by Herzberg, et al., concerning engineers and accountants\(^3\); Schaffer involving professional and semi-professional men in four different industries\(^4\); Myers with five different groups of personnel classifications at Texas Instruments\(^5\); and Porter concerning various levels of management at different types of industrial organizations\(^6\), have further clarified and greatly advanced this field of study. A short review of the findings and conclusions drawn from these works will be presented to lead into the survey conducted for this thesis.


The study by Katz, Maccoby and Morse was carried on in the Prudential Insurance Company, where 10,000 people are employed at the home office. They selected 24 groups of workers in similar types of work, such that 12 groups were high productivity and 12 low. Each high productivity group was paired with a low group with the same aptitude scores, the same wage distribution, age, length of service, distance from work and satisfaction in housing and community. This matching enabled the high and low productivity groups to be compared with all external factors being known and equal and only the internal, or work oriented factors causing differences in productivity. Four measures of job satisfaction were selected; namely, (1) pride in work group; (2) intrinsic job satisfaction; (3) company involvement; and (4) financial and job status satisfaction. Groups of questions in the interview with each employee covered each of these attitude measures, and the coding given each answer formed the basis of the values of these measures.

The only measure that showed a relationship to productivity was pride in work group. But the authors questioned the cause-effect relationship of this measure. Is the pride in the work group increased in higher productivity groups because they produce more and better than a low group, or do they produce more and better because they are proud of the group?¹

Morse conducted a similar study, later, using the same measures of satisfaction and found similar results. As in the previous

¹Katz, Maccoby, Morse, p. 48.
study, the groups with the most satisfaction derived from their jobs, position, pay, etc., were not necessarily those with the highest productivity. She does develop some interesting discussions on job satisfaction. Tension level is equated with the needs of the individual in that the higher tension level, the stronger that person's needs. Anything that reduces the tension level is considered satisfying. "The amount of satisfaction experienced by the individual is a function of: (1) how much his needs are fulfilled by being in a particular situation ... and (2) how much his needs remain unfulfilled." The satisfaction an employee experiences appears "to be a function of both what he wanted from a situation and what he obtained from it." Thus, "a worker who aspires to little may be happy with a very modest job ... a worker whose aspiration level continues to rise as his own achievements rise may never feel that his company has properly recognized his abilities."

Schaffer conducted his study with 72 professional and semi-professional men in four different organizations. He established, on the basis of questionnaire results, an average need hierarchy for the sample. Herzberg, et al., conducted their study with 200 engineers and accountants in nine different companies. He, also, obtained a rank ordering of those needs contributing toward favorable job attitudes. Myers conducted his study among 282 men and

1Morse, p. 115.  
2Ibid., p. 32. 
3Ibid., p. 27.  
4Ibid., p. 75.
women at Texas Instruments. These were grouped into categories of scientists, engineers, manufacturing supervisors, technicians and women assemblers. Through an interview, the rank ordering of the important needs for each group was obtained. Table 1, pages 28 and 29, presents a comparison of the employees' need rankings disclosed in these three studies. An important fact revealed in this figure is that not all groups have the same need rankings, although responsibility is near the top of most of them. This fact should be expected due to differences in job aspirations. "A woman working on an assembly line has little concern with advancement, since this is not a reasonable expectation; however, a supervisor's main motivation or drive may be toward advancement."1

Herzberg, et al., in their study found that not all of their 16 needs were bipolar with respect to job satisfaction. That is, that some needs will evoke satisfaction if met and not dissatisfaction if not met and others create the opposite reactions. From this finding, Herzberg developed his Motivation-Hygiene Theory. This theory, in its most condensed terms, states that certain needs contribute to a person's hygiene, which must be fulfilled or dissatisfaction will result and if fulfilled do not motivate; and a second set of needs contribute to motivation if they are fulfilled. The major things leading to good or poor hygiene were company policy and administration, supervision, salary, interpersonal relations

1Applewhite, p. 18.
<table>
<thead>
<tr>
<th>Table 1, Job Satisfaction Ratings Determined in Various Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schaffer, Myers, et al.</td>
</tr>
<tr>
<td>Moral value scheme (need to have behavior agree with this scheme) + Pay - Recognition + Achievement - Work itself + Friendliness 4.</td>
</tr>
<tr>
<td>Interpersonal relationships ment + Advancement + Competence of supervision + Possibility of growth + Company policy and administration 5.</td>
</tr>
<tr>
<td>Salary Recognition + Advancement + Competence of supervision + Friendliness Achievement Achievement 6.</td>
</tr>
<tr>
<td>Dominance Possibility of growth Achievement Achievement + Work itself + Competence of supervision 7.</td>
</tr>
</tbody>
</table>

Reprinted by permission from, Organization and Behavior, Applewhite, Philip, B., Prentice-Hall.
<table>
<thead>
<tr>
<th></th>
<th>Recognition</th>
<th>Interpersonal relations (subordinates)</th>
<th>Competence of supervision</th>
<th>Competence of supervision</th>
<th>Recognition of company policy and administration</th>
<th>Company policy and administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Recognition</td>
<td>Interpersonal relations (subordinates)</td>
<td>Competence of supervision</td>
<td>Competence of supervision</td>
<td>Recognition of company policy and administration</td>
<td>Company policy and administration</td>
</tr>
<tr>
<td>9</td>
<td>Economic security</td>
<td>Status</td>
<td>Friendliness of supervision</td>
<td>Peer relations</td>
<td>Peer relations</td>
<td>9.</td>
</tr>
<tr>
<td>10</td>
<td>Independence</td>
<td>Interpersonal relations (superior)</td>
<td>Recognition</td>
<td>+</td>
<td>10.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Socio-economic status</td>
<td>Interpersonal relations (peers)</td>
<td></td>
<td></td>
<td>11.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Dependence</td>
<td>Supervision technical</td>
<td></td>
<td></td>
<td>12.</td>
<td></td>
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<tr>
<td>13</td>
<td>Company policy and administration</td>
<td></td>
<td></td>
<td></td>
<td>13.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Working condition</td>
<td></td>
<td></td>
<td></td>
<td>14.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Factors in personal life</td>
<td></td>
<td></td>
<td></td>
<td>15.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Job security</td>
<td></td>
<td></td>
<td></td>
<td>16.</td>
<td></td>
</tr>
</tbody>
</table>

**KEY:** those in parentheses are nearly equal in rank; +lead to satisfaction (primarily); -lead to dissatisfaction (primarily); those unmarked are bipolar (primarily).

TABLE 1, Continued
and working conditions. If these items were not up to the employee's expectations, they lead to dissatisfaction with the job. However, the things leading toward motivation — achievement, recognition, work itself, responsibility and advancement — did not cause dissatisfaction if unfulfilled but reduced motivation.

Relating these items to Maslow's need hierarchy, the hygiene factors are those things that contribute to fulfillment of the lower level needs and the motivating factors are those things that enhance fulfillment of the high level needs. Company policy, interpersonal relations, salary, etc. are concerned with security and social needs, whereas achievement, recognition, advancement, etc. are involved with esteem and self-actualization needs. Thus, if we are interested in motivating participants in an organization, we must attempt to fulfill their higher order needs. Likewise, if we wish to compare organizations in their ability to motivate, we should compare the satisfactions of the higher order needs of their participants.

Lyman W. Porter conducted two similar studies to determine the organizational pattern of managers' perceived need satisfactions. The first study involved only 139 bottom and middle management personnel at three companies. The second covered a much larger sample of some 2000 managers employed by several hundred companies. The survey was conducted by having the participants rate a questionnaire consisting of thirteen job characteristics. These characteristics were related to Maslow's need hierarchy and the results
indicated the respondents perceived need deficiencies for each need category.

Porter's study needs to be discussed in detail as it is the pattern used for the study conducted for this thesis. He wished to discover if deficiencies in perceived need satisfactions and need importance varied between organizational levels of management. Each respondent rated each of 13 job characteristics three ways:

1. How much of the characteristic is there now connected with your management position?
2. How much of the characteristic do you think should be connected with your management position?
3. How important is this position characteristic to you?

The deficiency of a respondent's perceived needs could be measured by subtracting the rating of Question 2 from Question 1, and the importance of a need by the rating given to Question 3.

The categories of needs studied were in general agreement with Maslow's need hierarchy with two exceptions. First, no characteristics were considered to measure deficiencies in physiological needs, as these were considered to be adequately satisfied for any managerial person. Second, Porter further defined the esteem need by subdividing it into esteem and autonomy needs, esteem being concerned mainly with position prestige, and autonomy with position authority and independence of function from outside or higher level authority. Thus, he measured deficiency in five need categories:

Porter drew the following conclusions from his study:

1. The vertical location of management positions appears to be an important variable in determining the extent to which psychological needs are satisfied.

2. Higher order needs are less satisfied at all levels of management.

3. The greatest difference in need satisfaction between levels of management occurred at the higher order needs. The high management levels had less need deficiency in esteem, autonomy and self-actualization needs.

4. A fairly large number of managers even at high levels of organizations are not satisfied with their opportunities to obtain the amount of self-actualization they think should be available from their job. The same conclusion would hold true for the esteem and autonomy need areas, although to a slightly reduced degree.

5. Increased size of the total organization does not reduce need satisfaction, but increased size of intra-organizational units does affect satisfaction. Thus a man employed in a large organization consisting of many small organizational units perceives no less need satisfaction than if he were working in a similar organization.
Summary

This chapter has presented some of the basic ideas on formal and informal organizations, behavior of the participants in these organizations, and some of the research performed by behavioral scientists to discover why organizations, and the people in them, function as they do. This review has lead from some of the very basic ideas on organizational structure, through a discussion on organizational impact upon its participants, to some of the research, both early and the latest, performed on behavior within the organizational context.

Man has created organizations to allow him to accomplish goals that he cannot do singularly. He has designed his organizations with certain scientific-management principles; i.e., unity of command, span of control, and specialization of functions. Using these principles, a very clearly defined picture of the organization structure can be drawn, but researchers have found that this is not the real structure of an organization. They have discovered the informal organization, which is composed of groupings of the organizational participants, but hardly ever in the same groupings as proposed by the formal structure. Their research has found that these informal groups influence their members more than the incentives of the formal structure.

Organizational policy, generally, collides head-on with the natural growth pattern of the individual. Argyris believes that
most organizations are over-controlled and directed from the top level, allowing for very little selection of choice or use of judgement at the lower levels. This causes frustration for the healthy, mature individual and leads to a less than optimum mentally healthy condition on his part and reduces the organization's effectiveness because man's high level needs are being left unfulfilled. This condition will become more acute in the future, if organizations do not change their methods, because the latest generation and future generations are more highly educated, less dependent and more aware of themselves and their surroundings and more mature than past generations at the same point in life.

To understand man's behavior and motivation in the organization context, researchers have analyzed his needs and means of need satisfaction. It was learned that we have several levels of needs, from the lowest level physiological, security and social needs to the higher level esteem and self-actualization needs. After satisfying the need for food, shelter and safety, man then becomes dissatisfied with the high level needs. He then desires a feeling of accomplishment, of being useful and necessary to his environment, and later he wants to accomplish those things that he is most adept at doing.

Studies conducted in industrial organizations on need fulfillment provided by the job have indicated:

1. That man's needs can be divided into two groups: one, termed hygiene and the second, motivators. These relate to Maslow's
lower and higher level needs respectively.

2. Company policy, interpersonal relations, salary, and administration lead to good or poor hygiene depending upon whether the employee considers these things satisfactory or not.

3. Achievement, recognition, work itself, responsibility and advancement lead to motivation or non-motivation of the employee.

4. An organization providing good hygiene can expect satisfied employees, but not necessarily motivated ones because motivation results from fulfillment of other needs than hygiene.

5. That organization size and the level one occupies within the organization affect the amount of perceived need satisfaction received from his job. These factors affect the higher level needs, with persons in higher organizational levels receiving more satisfaction through esteem and self-actualization.
CHAPTER III

THE METHOD OF CONDUCTING THE STUDY

Introduction

This chapter will describe the procedures followed to conduct the study investigating the need satisfaction characteristics of recent college graduates. It is outlined to follow closely with the actual chronological steps used in selecting the participants; obtaining their responses to their job need satisfactions; and analyzing these responses.

The first section will describe the questionnaire, and its development, used to survey the participants. The questionnaire, originally, was identical to that used by Lyman Porter in his study of manager and executive need satisfactions. After several developmental stages, it was changed slightly into the final format.

The second section will discuss the selection of participants. During this phase, two factors were paramount; one, obtaining a random sample that would provide responses that were statistically representative of the entire population; and second, bridging as many different types of basic organization as possible. Several methods

could be employed to select participants, the one used herein was selected to maximize the largest number of the study objectives.

The third section presents the results of the survey and analysis of these results. This discussion leads into the final chapter and the testing of the hypothesis.

The Questionnaire

Lyman Porter, during the early 1960's, conducted studies of managerial level individuals for the perceived needs satisfactions received from their jobs. He obtained data through the responses of his participants to a questionnaire designed to disclose the need dissatisfactions of the respondent. The questionnaire listed 18 management position characteristics, 15 of which dealt with need satisfaction. The participant was asked to rate each of these 15 characteristics by circling a number on a rating scale from 1 to 7 for each of three questions:

1. How much of the characteristic is there now connected with your management position?

2. How much of the characteristic do you think should be connected with your management position?

3. How important is this position characteristic to you?

The perceived need dissatisfaction could then be obtained by subtracting the rating given to question 1 from that for question 2 for each of the 15 characteristics.

Porter's 15 position characteristics were designed to reveal
satisfaction information in several needs categories. These categories were in general agreement with the Maslow need hierarchy with two exceptions. First, no characteristics were concerned with the physiological needs, as all respondents were presumed to be adequately satisfied in this area. Second, an additional category was included to further define the Maslow "esteem" category. Porter listed the autonomy category between the esteem and self-actualization categories defined by Maslow as "these items have been put into a separate category since it seemed that they are logically distinct from other items that are more commonly associated with the term "esteem.""

The following is a listing of these position characteristics, grouped under the need category they represent:

I. Security needs
   a. The feeling of security in my management position

II. Social needs
   a. The opportunity, in my management position, to give help to other people
   b. The opportunity to develop close friendships in my management position

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

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

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

IV. Autonomy needs

a. The authority connected with my management position

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

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

d. The opportunity for participation in the determination of methods and procedures

V. Self-Actualization needs

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

b. 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 potentialities)

c. The feeling of worthwhile accomplishment in my management position

Items specific to two or more need categories

VI. The pay for my management position

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

The rating portion of the questionnaire used in this study was patterned after Porter's. Several changes were made at the outset: first, the term "management" was deleted as management personnel was not dealt with solely; and second, the two non-specific
items associated with pay and being-in-the-know were dropped.

The first portion, or general information, part of the questionnaire was designed to reveal the job oriented organizational parameters of the participant. Here, the type of organizational output, size of the total organization and size of the major subdivision in which the participant worked were of main concern. Other information desired, that was of a secondary nature, were age, degree, whether the position was supervisory or not, and if the participant had made any job changes.

This general information was used to categorize the participants into various classifications for comparison of job need satisfactions. Although the study was conducted to allow the analysis of job satisfactions relative to many variables, the basic approach was to determine if some organizational variables caused increased or decreased job satisfactions. Some authors have thought that the type of goods or service produced may affect job satisfactions; others have questioned the effect of the organization's size on satisfactions. Does one receive more satisfaction working in a large or small organization, or is the optimum place for work in a large organization with small autonomous sub-divisions? A copy of the original questionnaire is included in the Appendix A for reference purposes.

This questionnaire was discussed with two of my work associates, Messrs. Philip Blue and Henry Howell, to obtain recommendations for its improvement. Through their critical analyses came several
changes. First, some wording was altered to make the instructions more easily understood. Second, the question in Part I of the questionnaire concerning the size of the respondent’s sub-organization was rearranged to provide a more logical sequence. Third, the wording for the second characteristic rating statement was changed from "... do you think should be ..." to "... would you prefer to be ..." With these changes made, the questionnaire was prepared for test by a sample group of college graduates.

Through the consideration of a company, permission was obtained to send questionnaires, under the signature of the Personnel Manager, to 18 individuals who meet the year of graduation and degree criteria. The manager’s letter, forwarding the questionnaire, briefly explained the study, its purposes, and method of conduction. The sample group participants were asked to handle the questionnaire just as if they had received it through normal channels. They should answer it, if so inclined, and note any criticisms. Fourteen questionnaires were returned from this group for a 77.7% return rate. Of these, several had comments concerning the study and their interest, but none contained suggestions on the questionnaire, nor did any of the individuals have difficulty rating the characteristics. Therefore, the questionnaire was considered adequate for general distribution. This finalized form of the questionnaire and its introductory letter are in the Appendix.
Selection of Participants

One of the more important phases of the study involved selection of the individuals to respond to the survey. Two factors in this selection process had to be placed above others: first, the selection must be random to assure that the results could be considered accurate for the entire engineering and business college graduate population; and second, that a large cross-section of individuals employed in differing organizational types and sizes be sampled to allow the study of need satisfactions in relation to organizational variances.

There are basically two methods that could be employed to obtain participants meeting the criteria:

1. Obtain names of individuals through their colleges and correspond directly with them.

2. Request certain employing organizations to select some of their employees to participate.

The second method was chosen since it would allow the control of the organization type selected; whereas, with the first method, the organization type of the respondent would solely be based on chance. However the method selected is not without limitations; such as, many employing organizations do not have information on degree and year of graduation readily available on their employes, whereas a college could easily categorize their graduates in this manner. Therefore, both selection methods have advantages in fulfilling certain criteria; nevertheless, the overriding requirement
to control the organizational parameters of the study dictated selection via the employing organization method.

Business organizations were selected from the list of the 500 largest U.S. corporations in July 15, 1966, issue of *Fortune*. Through the use of a random number table, the 156 organizations were selected by their numerical standing from 1 to 500. The *Fortune* list has the corporations divided into categories of manufacturing, finance, transportation, public utilities, and trade. This enabled division of the business organizations into these categories for this study.

The government organizations were selected in a similar manner, through use of random number table, and the *United States Government Organization Manual*. Although the original intent was to obtain samples from both state and city government employees, no method could be found to select these organizations nor to contact them to solicit their participation. No two cities or states handle the employment of personnel in the same manner, and so to eliminate further confusion, these individuals were deleted from the sample.

After selecting the business and federal government organizations, each was sent a letter requesting their participation and a copy of the questionnaire. A copy of these are included in Appendices B and C. The following table lists the organizations, by type, selected for participation and the positive responses received to the request for participation.
<table>
<thead>
<tr>
<th>Organization Type</th>
<th>Number Selected</th>
<th>Positive Response</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>64</td>
<td>11</td>
<td>17.1</td>
</tr>
<tr>
<td>Transportation</td>
<td>20</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td>Public Utilities</td>
<td>20</td>
<td>2</td>
<td>10.0</td>
</tr>
<tr>
<td>Trade</td>
<td>20</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>Finance</td>
<td>32</td>
<td>10</td>
<td>31.2</td>
</tr>
<tr>
<td>Government</td>
<td>25</td>
<td>10</td>
<td>40.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>181</strong></td>
<td><strong>42</strong></td>
<td><strong>23.2</strong></td>
</tr>
</tbody>
</table>

Table 2 - Organizations Selected and Responding by Type

Although the organizations were not selected on the basis of location, to insure randomness, a cross-section of the United States was desired. The outcome of the sample selection produced organizations from 31 states plus the District of Columbia. Of these organizations, the ones returning a positive response were located in 14 states plus Washington, D.C. Table 3 page 45 lists by state the locations receiving questionnaires.

The 42 organizations returning a positive response to the request for their employees' participation in the study, requested 439 questionnaires. These were mailed to each organization, in the quantities desired, for distribution to their employees. The employees were furnished an addressed, stamped envelope for return of the questionnaire after its completion. Table 4, on page 46, indicates the number of questionnaires sent and returned by organization type.

The 181 participants, representing six basic organization types, were obtained by soliciting various organizations, selected through a random sampling technique. The overall return rate of the questionnaires was within that expected for surveys of this nature.
<table>
<thead>
<tr>
<th>State</th>
<th>Number of Organizations</th>
<th>Positive Responses</th>
<th>State</th>
<th>Number of Organizations</th>
<th>Positive Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>3</td>
<td>0</td>
<td>Nebraska</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>California</td>
<td>16</td>
<td>4</td>
<td>New Jersey</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Colorado</td>
<td>1</td>
<td>0</td>
<td>New York</td>
<td>31</td>
<td>6</td>
</tr>
<tr>
<td>Connecticut</td>
<td>5</td>
<td>1</td>
<td>North Carolina</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Delaware</td>
<td>1</td>
<td>0</td>
<td>Ohio</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Florida</td>
<td>3</td>
<td>0</td>
<td>Oklahoma</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Georgia</td>
<td>3</td>
<td>2</td>
<td>Oregon</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Illinois</td>
<td>16</td>
<td>3</td>
<td>Pennsylvania</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Indiana</td>
<td>2</td>
<td>0</td>
<td>Rhode Island</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Iowa</td>
<td>1</td>
<td>0</td>
<td>Tennessee</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Louisiana</td>
<td>1</td>
<td>0</td>
<td>Texas</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Maryland</td>
<td>1</td>
<td>0</td>
<td>Virginia</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>4</td>
<td>0</td>
<td>Washington</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Michigan</td>
<td>9</td>
<td>3</td>
<td>Washington, D.C.</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Minnesota</td>
<td>7</td>
<td>2</td>
<td>West Virginia</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Missouri</td>
<td>7</td>
<td>2</td>
<td>Wisconsin</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 3 - Organizations Selected and Responding by State
but the return rate between the organization types varied to the extent that the sample composition is weighed toward some organization types. For example, the Finance area, including insurance and real estate, has approximately one-third of the returned questionnaires, whereas, Public Utilities has only 2 percent of those returned. Both the Trade and Public Utilities area only had one responding organization, thus the credibility of these organizations representing the remainder of their industry is highly questioned. The remaining four basic organizational types have provided an acceptable sample. Of course, the analysis of the questionnaires was intended to go beyond the differences between organizations; therefore, the overall return is considered adequate to provide the information desired. Thus, the concluding section to this chapter will discuss the analysis of the returned questionnaires.

The Results of the Survey

This section will discuss the analyses performed on the
returned questionnaires and the results of these analyses. It will be subdivided into each of these analyses, such as the comparison of organizational type and size, the type degree held by the participants, and the type of job the participants held.

The participants rated each job characteristic from two viewpoints:

a. How much of the characteristic is there now connected with your position?

b. How much of the characteristic would you prefer to be connected with your position?

The instructions for completing the questionnaire contained the following example for rating the job characteristics:

You are to answer the questions for each characteristic on a rating scale by circling an appropriate number. Select low numbers to represent low or minimum amounts of the characteristic, and high numbers to represent high or maximum amounts.

EXAMPLE: The opportunity, in your position, to give help to other people.

How much is there now? 1 2 3 4 5 6 7 8 9 10

How much would you prefer? 1 2 3 4 5 6 7 8 9 10

If your position requires that you work largely alone, you would probably mark the first question 1, 2, or 3. However, if you are in an instructional-type position, you would circle a high number. For the second question, depending upon what you find personally satisfying, you circle a high or low number. If you do not necessarily find giving help to others very rewarding, circle a low number; but if you feel the reverse, a higher number should be indicated.

Upon receipt of the returned questionnaires, the participant's rating for a job characteristic was obtained by subtracting the rating for "how much is there now?" from "how much would he prefer?"
This indicates his perceived need deficiency for job characteristic by determining the difference between his preference to that which he experiences. This rating scale yields complete satisfaction as zero and full deficiency as nine. To obtain the perceived need satisfaction of the participant, his ratings for job characteristics related to a need category were averaged. The following list indicates the need category and the job characteristics combined to rate that category.

<table>
<thead>
<tr>
<th>Need Category</th>
<th>Question Number</th>
<th>Job Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Security Needs</td>
<td>3:3</td>
<td>The feeling of security.</td>
</tr>
<tr>
<td>II. Social Needs</td>
<td>1:1</td>
<td>The opportunity to give help.</td>
</tr>
<tr>
<td></td>
<td>8:8</td>
<td>The opportunity to develop friendships.</td>
</tr>
<tr>
<td>III. Esteem Needs</td>
<td>10:8</td>
<td>The regard or value you hold.</td>
</tr>
<tr>
<td></td>
<td>4:6</td>
<td>The prestige inside organization.</td>
</tr>
<tr>
<td></td>
<td>7:6</td>
<td>The prestige outside organization.</td>
</tr>
<tr>
<td>IV. Autonomy Needs</td>
<td>6:8</td>
<td>The opportunity for independent action.</td>
</tr>
<tr>
<td></td>
<td>11:1</td>
<td>The opportunity for setting goals.</td>
</tr>
<tr>
<td></td>
<td>12:1</td>
<td>The authority in your position.</td>
</tr>
<tr>
<td></td>
<td>13:1</td>
<td>The opportunity for determining methods.</td>
</tr>
<tr>
<td>V. Self-Actualization Needs</td>
<td>5:8</td>
<td>The opportunity for personal growth.</td>
</tr>
<tr>
<td></td>
<td>9:2</td>
<td>The feeling of self-fulfillment.</td>
</tr>
<tr>
<td></td>
<td>2:8</td>
<td>The feeling of worthwhile accomplishment.</td>
</tr>
</tbody>
</table>
Throughout the remainder of this paper, the job characteristics will not be listed separately; rather, all analyses will be performed upon the averaged rating for the need categories.

The following sub-sections will discuss various analyses upon the data collected. First, the categories of organization types, degrees and organization size will be discussed; later, further combining of the categories will produce more sophisticated divisional lines between groupings. Statistical significance is tested using the Aspin-Welch test for the difference between two sample means. Sample calculations using this test are in the Appendix D.

**Comparison by Organization Type**

As previously mentioned, two organization categories had very small responses: Public Utilities with four questionnaires, and Trade with 13. Also, the intent was to separate Research and Development organizations from those engaged in Manufacturing, but only three questionnaires were returned for this category; therefore, they were combined with the Manufacturing questionnaires. Among the remaining four categories, very slight differences are noted in the average perceived need deficiency. Table 5, page 50, indicates these average need deficiencies for each category of organization.
Discounting the two low return categories, no significant differences are noted between the remaining categories, except the slightly higher deficiency figure for finance personnel in the autonomy need area. This could indicate that these personnel feel a lack of freedom to perform their jobs as they wish to perform them, when compared to individuals in other fields. Here again, though, the difference is not considered significant.

It is significant to note that with all categories except Trade, the Maslow need hierarchy is followed from lower level needs to higher ones. The lower level needs are satisfied more completely than those of Autonomy and Self-Actualization, which further confirms that as the lower level needs become satisfied, yet higher level needs emerge to be fulfilled. Why the discrepancy from this

<table>
<thead>
<tr>
<th>Organization Type</th>
<th>Security</th>
<th>Social</th>
<th>Esteem</th>
<th>Autonomy</th>
<th>Self Actualization</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>0.3</td>
<td>1.3</td>
<td>2.1</td>
<td>2.6</td>
<td>3.1</td>
<td>41</td>
</tr>
<tr>
<td>Transportation</td>
<td>0.4</td>
<td>1.4</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>27</td>
</tr>
<tr>
<td>Public Utilities</td>
<td>0.8</td>
<td>1.4</td>
<td>1.8</td>
<td>2.8</td>
<td>3.3</td>
<td>4</td>
</tr>
<tr>
<td>Trade</td>
<td>0.8</td>
<td>1.3</td>
<td>2.2</td>
<td>2.4</td>
<td>3.1</td>
<td>13</td>
</tr>
<tr>
<td>Finance</td>
<td>0.5</td>
<td>1.7</td>
<td>2.1</td>
<td>3.1</td>
<td>3.3</td>
<td>60</td>
</tr>
<tr>
<td>Government</td>
<td>0.7</td>
<td>1.3</td>
<td>2.2</td>
<td>2.8</td>
<td>3.0</td>
<td>26</td>
</tr>
</tbody>
</table>

Table 5 - Average Need Deficiency by Organization Type
theory is apparent in the Trade category can only be explained by
the small sample size, or a genuine fulfillment of the Self-Act-
ualization need before those of Autonomy and Esteem. A larger
sampling of this group would be required to prove this but, un-
fortunately, only one interested organization in this field was
obtained.

Overall, the data indicates that there is little or no signifi-
cant difference between organizations engaged in differing busi-
ness or government fields in the satisfaction their employes re-
ceive from their jobs. It is interesting to note that the need
satisfactions of Government employes closely match those found in
the Manufacturing organizations. The articles mentioned in the
previous chapter pointed out that many college graduates thought
that work in a Government organization would produce greater satis-
faction than business organizations, but the results of this survey
have found no significant difference between graduates employed in
these organizations.

Comparison by Degree

As little difference was discovered in the need satisfactions
of graduates in various types of organizations, further categories
were compared. The results from the survey were segregated by
the type of the respondent's degree. To keep this analysis sim-
ple, all degrees were classified either as business or science
degrees. Table 6, page 52, lists the need deficiencies for these
degrees, both as total groups, and separated into Masters and
Bachelors categories.

<table>
<thead>
<tr>
<th>Degree</th>
<th>Security</th>
<th>Social</th>
<th>Esteem</th>
<th>Autonomy</th>
<th>Self-Actualization</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science - all</td>
<td>0.5</td>
<td>1.3</td>
<td>2.1</td>
<td>2.7</td>
<td>3.0</td>
<td>82</td>
</tr>
<tr>
<td>Business - all</td>
<td>0.5</td>
<td>1.7</td>
<td>2.2</td>
<td>2.9</td>
<td>3.0</td>
<td>99</td>
</tr>
<tr>
<td>Science - Master</td>
<td>0.1</td>
<td>1.3</td>
<td>2.2</td>
<td>2.4</td>
<td>3.2</td>
<td>8</td>
</tr>
<tr>
<td>Science - Bachelor</td>
<td>0.5</td>
<td>1.3</td>
<td>2.1</td>
<td>2.7</td>
<td>3.0</td>
<td>74</td>
</tr>
<tr>
<td>Business - Master</td>
<td>0.3</td>
<td>1.7</td>
<td>1.9</td>
<td>2.5</td>
<td>2.9</td>
<td>23</td>
</tr>
<tr>
<td>Business - Bachelor</td>
<td>0.5</td>
<td>1.7</td>
<td>2.3</td>
<td>3.0</td>
<td>3.0</td>
<td>76</td>
</tr>
</tbody>
</table>

Table 6 - Average Need Deficiency by Degree

Again, little difference is noted between these classifications. One interesting result is found here, the individuals with a Master in Science degree were completely satisfied in the Security need area.

Comparison by Organization Size

The questionnaire requested two responses on the participant's organizational size. First, he was to indicate the size of the overall organization. He could select three responses: (a) up to 500 employees, (b) 501 to 5000 employees, and (c) 5001 and more employees. Secondly, he was asked to designate the area within the total organizations for which he worked, such as engineering, marketing, personnel, etc., and its size. Here he could select one of four responses: (a) up to 25 employees, (b) 26-100 employees, (c) 101-1000 employees, and (d) above 1001 employees. This was designed to allow comparisons not only by total organization size but
also by the size of the immediate major organizational division. Tables 7 and 8 list the average need deficiency by organization size.

<table>
<thead>
<tr>
<th>Total Organization Size</th>
<th>Security</th>
<th>Social</th>
<th>Esteem</th>
<th>Autonomy</th>
<th>Self-Actualization</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 500</td>
<td>1.1</td>
<td>2.1</td>
<td>2.8</td>
<td>3.3</td>
<td>2.3</td>
<td>10</td>
</tr>
<tr>
<td>501-5000</td>
<td>0.6</td>
<td>1.7</td>
<td>2.2</td>
<td>2.8</td>
<td>3.3</td>
<td>89</td>
</tr>
<tr>
<td>5000-Up</td>
<td>0.3</td>
<td>1.2</td>
<td>2.1</td>
<td>2.7</td>
<td>2.8</td>
<td>82</td>
</tr>
</tbody>
</table>

Table 7 - Comparison of Need Deficiency by Total Organization Size

<table>
<thead>
<tr>
<th>Major Organizational Division Size</th>
<th>Security</th>
<th>Social</th>
<th>Esteem</th>
<th>Autonomy</th>
<th>Self-Actualization</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 25</td>
<td>0.7</td>
<td>1.5</td>
<td>2.3</td>
<td>2.9</td>
<td>2.9</td>
<td>68</td>
</tr>
<tr>
<td>26-100</td>
<td>0.6</td>
<td>1.8</td>
<td>2.2</td>
<td>2.9</td>
<td>3.2</td>
<td>58</td>
</tr>
<tr>
<td>101-1000</td>
<td>-0.3</td>
<td>1.2</td>
<td>1.9</td>
<td>2.4</td>
<td>3.0</td>
<td>29</td>
</tr>
<tr>
<td>1001-Up</td>
<td>0.5</td>
<td>1.2</td>
<td>2.0</td>
<td>2.6</td>
<td>3.0</td>
<td>26</td>
</tr>
</tbody>
</table>

Table 8 - Comparison of Need Deficiency by Organization Division Size

These organization size comparisons have some differences, but none that can be considered significant. The "up to 500 employees" classification has the highest security need deficiency and the lowest Self-Actualization need deficiency. This could indicate that employees in small organizations feel their jobs are
less secure, perhaps due to the size of these organizations and their inherent instability; but, at the same time reap more fulfillment from their jobs. Analysis of the collected data using the Aspin-Welch test for the significant difference between two sample means indicated that these two means are not significantly different.

The second classification of organizational size, the major organization division, found very slight differences in need deficiencies. Reviewing these two companies would lead one to conclude that size has very minimal effect on need satisfactions found in the job. At this point, a comment made by Porter in his study seemed appropriate to investigate. He hypothesized from the data he collected on management personnel that, "Increasing the size of the total organization, and thereby achieving the technical advantages of a large scale organization, will not necessarily tend to reduce the job satisfaction and morale of employees, as long as intraorganizational units are kept small." Therefore, the responses were subdivided into classifications of total organization size by intraorganization size. The small organizations were not subdivided by intraorganization size as there were only two participants in other than the smallest major organizational division. Tables 9 and 10, page 55, list the results.

of these analyses for the two larger total organization size classifications.

<table>
<thead>
<tr>
<th>Major Organizational Division</th>
<th>Security</th>
<th>Social</th>
<th>Esteem</th>
<th>Autonomy</th>
<th>Self Actualization</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 25</td>
<td>0.5</td>
<td>1.8</td>
<td>2.0</td>
<td>2.7</td>
<td>3.0</td>
<td>31</td>
</tr>
<tr>
<td>26-100</td>
<td>0.8</td>
<td>1.7</td>
<td>2.1</td>
<td>3.1</td>
<td>3.5</td>
<td>39</td>
</tr>
<tr>
<td>101-1000</td>
<td>0.2</td>
<td>1.3</td>
<td>2.5</td>
<td>3.1</td>
<td>3.4</td>
<td>13</td>
</tr>
<tr>
<td>1001-Up</td>
<td>0</td>
<td>1.2</td>
<td>1.6</td>
<td>1.4</td>
<td>2.2</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 9 - Need Deficiency by Major Organizational Size for the Total Organization Size Classification of 501 to 5000 Employees

<table>
<thead>
<tr>
<th>Major Organizational Division</th>
<th>Security</th>
<th>Social</th>
<th>Esteem</th>
<th>Autonomy</th>
<th>Self Actualization</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 25</td>
<td>0.6</td>
<td>1.1</td>
<td>2.2</td>
<td>2.9</td>
<td>2.9</td>
<td>28</td>
</tr>
<tr>
<td>26-100</td>
<td>0.3</td>
<td>1.9</td>
<td>2.0</td>
<td>2.7</td>
<td>2.6</td>
<td>19</td>
</tr>
<tr>
<td>101-1000</td>
<td>0.8</td>
<td>0.9</td>
<td>1.5</td>
<td>2.0</td>
<td>2.4</td>
<td>16</td>
</tr>
<tr>
<td>1001-Up</td>
<td>0.7</td>
<td>1.2</td>
<td>2.2</td>
<td>3.1</td>
<td>3.4</td>
<td>19</td>
</tr>
</tbody>
</table>

Table 10 - Need Deficiency by Major Organizational Size for the Total Organization Size Classification of 5001 or More Employees

Considering the total organization size classification of 501 to 5000 employees, no significant differences are noted. The lower deficiency ratings for the major organizational division of 1001 or
more employees cannot be considered significant due to the small sample size. The total organization size classification of 501 to 5000 employees had one major organizational division, 1001 and more employees, that rated higher need deficiency. Analysis of this classification using the Aspin-Welch test found that it was not significantly different from the other classifications.

Although some of the classifications did indicate differences in the ratings for need satisfaction, none were found to be significantly different when statistically analyzed. Therefore, the data collected in this survey indicates no significant difference in the need satisfactions of employees in various sizes of organizations.

Comparison by Job Type

The questionnaire contained several questions concerning the type of job in which the respondent was engaged. First, he was asked his job title and then whether that job was a supervisory position. There was not enough similarity in job titles to facilitate meaningful groupings. Therefore, an analysis was made of technical versus non-technical jobs. Technical jobs were those involving the sciences, engineering, design and computer applications; and non-technical jobs were those engaged in administration, and general business management. Table II, page 57, indicates the results of the analysis performed on these two classifications.
The technical job participants had slightly lower need deficiency ratings than the non-technical, but these differences were not large enough to be statistically significant. Therefore, a further analysis of job types, classified by organizational size characteristics was undertaken. Not all organizational sizes had sufficient numbers of respondents in both technical and non-technical job types to perform an analysis. Table 12, page 58, indicates the average need deficiencies for categories of job types dependent on organizational size. This analysis indicates slightly higher need satisfactions for technical job oriented participants in all organization sizes that had sufficient response to permit an analysis. The results do not indicate a statistically significant difference between the technical and non-technical participants in any organization size.

The analysis of supervisory versus non-supervisory positions indicated no significant difference in need deficiency ratings. Table 13, page 59, lists the results of this analysis.

<table>
<thead>
<tr>
<th>Job Type</th>
<th>Security</th>
<th>Social</th>
<th>Esteem</th>
<th>Autonomy</th>
<th>Self-Actualization</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical</td>
<td>0.4</td>
<td>1.3</td>
<td>1.9</td>
<td>2.3</td>
<td>2.9</td>
<td>48</td>
</tr>
<tr>
<td>Non-Technical</td>
<td>0.4</td>
<td>1.6</td>
<td>2.2</td>
<td>2.9</td>
<td>3.1</td>
<td>133</td>
</tr>
</tbody>
</table>

Table 11 - Comparison of Technical versus Non-Technical Jobs
<table>
<thead>
<tr>
<th>Total Organization Size</th>
<th>Major Division Organization Size</th>
<th>Security</th>
<th>Social</th>
<th>Esteem</th>
<th>Autonomy</th>
<th>Self-Actualization</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Up to 25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26-100</td>
<td>0.59; 0.9</td>
<td>1.4; 1.8</td>
<td>1.7; 2.3</td>
<td>2.4; 3.3</td>
<td>2.9; 3.7</td>
<td>12; 27</td>
</tr>
<tr>
<td></td>
<td>101-1000</td>
<td>Insufficient Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Above 1001</td>
<td>Insufficient Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1; 6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over 5001 Employees</td>
<td>Up to 25</td>
<td>0.8; 0.3</td>
<td>0.8; 1.3</td>
<td>2.1; 2.4</td>
<td>2.2; 3.4</td>
<td>2.8; 2.9</td>
<td>13; 15</td>
</tr>
<tr>
<td></td>
<td>26-100</td>
<td>Insufficient Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1; 16</td>
</tr>
<tr>
<td></td>
<td>101-1000</td>
<td>0.4; 1.3</td>
<td>0.7; 1.1</td>
<td>2.1; 1.3</td>
<td>2.1; 1.9</td>
<td>2.4; 2.4</td>
<td>5; 11</td>
</tr>
<tr>
<td></td>
<td>Above 1001</td>
<td>-0.4; 1.1</td>
<td>0.9; 1.3</td>
<td>1.7; 2.4</td>
<td>1.8; 3.5</td>
<td>2.9; 3.5</td>
<td>5; 14</td>
</tr>
</tbody>
</table>

**NOTE:** Deficiency averages are given for each category as technical; non-technical.

Table 12 - Need Deficiency by Job Type, Sub-Classified by Organization Size
Table 13 - Need Deficiency by Job Type, Supervisory versus Non-Supervisory

<table>
<thead>
<tr>
<th>Job Type</th>
<th>Security</th>
<th>Social</th>
<th>Esteem</th>
<th>Autonomy</th>
<th>Self-Actualization</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisory</td>
<td>0.6</td>
<td>1.5</td>
<td>2.2</td>
<td>2.6</td>
<td>3.2</td>
<td>59</td>
</tr>
<tr>
<td>Non-Supervisory</td>
<td>0.4</td>
<td>1.5</td>
<td>2.1</td>
<td>2.9</td>
<td>2.9</td>
<td>122</td>
</tr>
</tbody>
</table>

Summary

This chapter has presented the method of conducting the survey to collect data for this study. The development of the questionnaire to be completed by the participants was presented. This, originally, was very similar to the one used by Lyman Porter to survey the need satisfactions of managerial level personnel. After several developmental stages, the final questionnaire was sent to 439 prospective participants.

Participants were selected through their employing organization. Organizations were chosen randomly and categorized by type of product or service rendered. A total of 181 organizations were asked to participate, of these 42 responded positively. The participating organizations represented six basic organization types, located in 14 states and the District of Columbia.

The results of the survey were analyzed statistically using
the Aspin-Welch test for the difference between two means. These results were categorized into many classifications by organization types, sizes, and respondents' degrees and job types and analyzed for statistically significant differences between the classifications. The following chapter will discuss the conclusions drawn from these analyses and test the hypothesis.
CHAPTER IV

CONCLUSIONS AND TESTING THE HYPOTHESIS

This chapter will review the findings of this study and draw conclusions based upon them. The first section will list the conclusions, supporting data, and compare some of these conclusions with previous studies and present congruent or contrasting concepts. The second section will, based upon the previously drawn conclusions, test the hypothesis.

Conclusions

This section will be divided into general and specific conclusions. The general conclusions will be those that concern the total field of behavioral science in the workplace. The specific conclusions will be more concerned with the facts to support or decline the hypothesis.

General Conclusions

As this study is based heavily upon Maslow's theory of need hierarchy, it is essential that his theory be tested. Reviewing data from all categories and from the entire population, it is found that less dissatisfaction is experienced at the lower level needs (i.e., security, social) and more at higher level (i.e.,
autonomy and self-actualization). Several categories deviated from this, but such deviation was slight and generally occurred in the higher level needs where, for example, autonomy may be slightly lower than esteem.

1. That need dissatisfaction follows the Maslow hierarchy from low to high level needs. The lower level security and social needs are fulfilled to a greater extent than the higher level needs of esteem, autonomy and self-actualization.

2. Comparing these results to Herzberg's theory of Motivation-Hygiene, it can be concluded that the average individual is more fully satisfied in the hygiene areas than those promoting motivation and that there is greater dissatisfaction with those characteristics leading towards motivation which inherently places a higher need value on these items.

One of the major reasons that this study was undertaken was to test the idea, presented by highly-renowned authors, that some organizations provide greater job satisfactions than others. Many articles had been written about recent college graduates and their selection of positions based upon the type of organization. This criteria is allegedly selected because some organizations provide greater satisfaction than others, due to their more important end product. The results of this study find no significant difference in the participants perceived need satisfactions between organizational types. Therefore, it is concluded that organizational type variables do not affect the perceived need satisfactions of the
These general conclusions tend to support the past work in organizational effects on human behavior patterns. The following specific conclusions will be drawn pertaining to the individual organizational classification analyzed in this study.

**Specific Conclusions**

1. There is no significant difference in perceived need satisfactions between business organization classifications and Federal government organization. (Pages 49-50)

2. There is no significant difference in perceived need satisfactions that can be attributed to the degree held by the respondent. (Page 51)

3. There is no significant difference in perceived need satisfactions caused by the total size of the respondent's employing organization. (Page 52)

4. There is no significant difference in perceived need satisfactions of respondents in varying size sub-organizational divisions. (Page 53)

5. There is a tendency toward improved perceived need satisfactions of respondents in larger total organizations with smaller sub-organizational divisions. The data was not statistically significant but was closely approaching. (Pages 54-55)

6. There is no significant difference in perceived need satisfactions that is attributable to technical versus non-technical jobs or supervisory versus non-supervisory jobs. (Pages 56-57)
7. There is a tendency toward lower perceived need satisfactions for non-technical when compared to technical respondents in similar organization size classifications. Again, the data only closely approached statistical significance. (Pages 58-59)

**Testing the Hypothesis**

The hypothesis proposed that there is a significant difference in the perceived need satisfactions of recently graduated Engineering and Business students which could be attributed to different job classifications and/or to the influence of organizational variables. Inasmuch as the study was conducted amongst recent Engineering and Business student graduates; and that the collected data was studied from job classifications standpoint and organization variables standpoint; and no significant differences were found in perceived need satisfactions; the hypothesis is rejected.
BIBLIOGRAPHY

Books


Periodicals


APPENDICES
QUESTIONNAIRE

I. General Information:

1. Age ________

2. Highest degree held __________, year granted _________________

3. Check the appropriate block below which best indicates the type of organization for which you work considering the end product or service produced.
   a. Manufacturing
   b. Research & Development
   c. Transportation
   d. Public Utilities
   e. Wholesale or Retail Trade
   f. Finance, Insurance & Real Estate
   g. Government, Specify whether Local, State, Federal and indicate Department or Bureau
   h. Other, Specify __________________________

4. Indicate the size of the organization described in 3 above.
   up to 500 __________, 501 to 5000 __________, 5001 & up __________

5. Indicate the area within the organization in which your particular job lies, such as: engineering, marketing, personnel, manufacturing, etc.

6. What is your job title? __________________________

7. Is this a supervisory position? Yes __________ No __________

8. How many people work in the area described in 5 above:
   up to 25 __________, 26-100 __________, 101-1000 __________, above 1001 __________
9. How many times have you changed jobs since your degree was granted? (A job change refers to a complete and final separation with an organization, through discharge, voluntary quitting, etc. Do not include promotions or transfers within the organization.)

II. Job Attitudes

On the following pages will be a list of several characteristics or qualities connected with your position. For each such characteristic, you are asked to give two ratings:

a. How much of the characteristic is there now connected with your position?

b. How much of the characteristic do you think should be connected with your position?

You are to answer the questions for each characteristic on a rating scale, by circling the appropriate number, where low numbers represent low or minimum amounts, and high numbers represent high or maximum amounts.

EXAMPLE: The opportunity, in my position, to give help to other people.

How much is there now? 1 2 3 4 5 6 7 8 9 10

How much should there be? 1 2 3 4 5 6 7 8 9 10

If your position requires that you work largely alone, you would probably mark the first question 1, 2, or 3. However, if you are in an instructional-type position, you would circle a high number. For the second question, depending upon what you find personally satisfying, you circle a high or low number. If you do not necessarily find giving help to others very rewarding, circle a low number; but if you feel the reverse, a higher number should be indicated.

1. The opportunity, in my position, to give help to other people.

How much is there now? 1 2 3 4 5 6 7 8 9 10

How much should there be? 1 2 3 4 5 6 7 8 9 10

2. The feeling of worthwhile accomplishment in my position.

How much is there now? 1 2 3 4 5 6 7 8 9 10

How much should there be? 1 2 3 4 5 6 7 8 9 10
3. The feeling of security in my position.
   How much is there now? 1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10

4. The prestige of my position inside the organization.
   How much is there now? 1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10

5. The opportunity for independent thought and action in my position.
   How much is there now? 1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10

6. The opportunity for personal growth and development in my position.
   How much is there now? 1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10

7. The prestige of my position outside the organization.
   How much is there now? 1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10

8. The opportunity to develop close friendships in my position.
   How much is there now? 1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10

9. The feeling of self-fulfillment obtained from my position (that is, the feeling of being able to use one's unique capabilities and realizing one's potentialities).
   How much is there now? 1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10

10. The regard or value in which I hold my position.
    How much is there now? 1 2 3 4 5 6 7 8 9 10
    How much should there be? 1 2 3 4 5 6 7 8 9 10
11. The opportunity, in my position, for participation in the setting of goals.

   How much is there now?  1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10

12. The authority connected with my position.

   How much is there now?  1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10

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

   How much is there now?  1 2 3 4 5 6 7 8 9 10
   How much should there be? 1 2 3 4 5 6 7 8 9 10
Dear Sir:

Recently there has been increasing concern over the attitude of college graduates towards careers in business. This concern has been expressed in articles written by businessmen, educators and consultants. The authors of these articles indicate that the graduate thinks that some jobs provide greater satisfaction than others, and that these jobs are usually in other-than-business organizations. To collect quantitative data that would allow a systematic analysis of this hypothesis, a survey is being conducted of recent Engineering and Business Administration college graduates to determine the degree of need satisfaction provided by their jobs. Graduates from many fields of business and government are to be surveyed and their responses analyzed to determine if the amount of job satisfaction varies between types of jobs, businesses and government agencies.

I am conducting this survey and analysis to collect data for my Master's Degree Thesis, entitled, Perceived Need Satisfactions of Recently Graduated Engineers and Business Students. Through a random selection process, your organization, along with 199 others, has been selected as a potential participant in this study. I would appreciate your approval to allow some of your employees to voluntarily participate in this survey. Information collected from participating organizations will be accumulated into general categories and not referred to individually by person or organization. Upon completion of the thesis, if you would desire a copy so that you may observe and make possible use of the findings and conclusions, I will be pleased to provide one.
Data will be collected through a questionnaire completed by the surveyed graduates. A copy of this questionnaire is enclosed for your information. The study is limited to Engineering and Business Administration graduates who have graduated from college during the calendar years 1964, 1965, 1966 and 1967. If you have employees meeting the degree and year of graduation requirements, please complete the enclosed form and send it to me. As each organization may wish to distribute the questionnaire to their employees in accordance with its own established procedures, I will mail all questionnaires for your organization to the individual indicated on your response. Enclosed with each questionnaire will be a letter of introduction and an addressed, stamped envelope for its return.

If you have any questions regarding the authenticity of this study or my qualifications for conducting it, please contact Dr. Milton Gordon, Professor, Department of Management, Division of Business and Economics, San Fernando Valley State College, 18111 Nordhoff Street, Northridge, California.

Thank you for your cooperation.

Respectfully yours,

David D. Carpenter

Enclosures ✓
APPENDIX C

Dear College Graduate:

Your organization has consented to allow a selected group of its employees to voluntarily participate in a survey of college graduates. This survey is being taken to collect data for my Master's degree thesis. The thesis hypothesizes that the amount of job satisfaction graduates receive is dependent upon the type and size of the organization for which they work.

The questionnaire enclosed with this letter can be answered frankly as your responses will be combined with others received from graduating in your job classification and statistically analyzed. None will be studied individually. Also, your organization, although it may have requested, and will receive a copy of the completed thesis, will not be able to obtain information pertaining to individual responses to the questionnaire.

The questionnaire is divided into two parts. The first contains general questions about yourself, organization and specific job. The second consists of 13 characteristics statements, which you are requested to rate, concerning your job.

Upon completion of the questionnaire, please mail it directly to me in the addressed stamped envelope provided. Thank you for your consideration and the time spent in carefully rating the characteristics of your job.

Very truly yours,

David D. Carpenter

DDC/sm

Enclosure
I. General Information:

1. Age________

2. Highest degree held________, year granted________

3. Check the appropriate block below which best indicates the type of organization for which you work from the standpoint of the end product or service produced.

   a. Manufacturing □

   b. Research & Development □

   c. Transportation □

   d. Public Utilities □

   e. Wholesale or Retail Trade □

   f. Finance, Insurance & Real Estate □

   g. Government, Specify whether Local State, Federal and indicate Department or Bureau ____________________________

   h. Other, Specify ____________________________

4. Indicate the number of employees in the organization described in 3 above.

   up to 500 □, 501 to 5000 □, 5001 & up □

5. Indicate the area within the organization in which your particular job lies, such as: engineering, marketing, personnel, manufacturing, etc. ____________________________

6. How many people work in the area described in 5 above:

   up to 25 □, 26-100 □, 101-1000 □, above 1001 □

7. What is your job title? ____________________________

8. Is this a supervisory position? Yes □ No □ How many people do you supervise? __________
9. How many times have you changed jobs since your degree was granted? (A job change refers to a complete and final separation with an organization, through discharge, voluntary quitting, etc. Do not include promotions or transfers within an organization.)

II. Job Attitudes

On the following pages will be a list of several characteristics or qualities connected with your position. For each such characteristic, you are asked to give two ratings:

a. How much of the characteristic is there now connected with your position?

b. How much of the characteristic would you prefer to be connected with your position?

You are to answer the questions for each characteristic on a rating scale by circling an appropriate number. Select low numbers to represent low or minimum amounts of the characteristic, and high numbers to represent high or maximum amounts.

EXAMPLE: The opportunity in your position, to give help to other people.

How much is there now? 1 2 3 4 5 6 7 8 9 10

How much would you prefer? 1 2 3 4 5 6 7 8 9 10

If your position requires that you work largely alone, you would probably mark the first question 1, 2, or 3. However, if you are in an instructional-type position, you would circle a high number. For the second question, depending upon what you find personally satisfying, you circle a high or low number. If you do not necessarily find giving help to others very rewarding, circle a low number; but if you feel the reverse, a higher number should be indicated.

1. The opportunity in your position, to give help to other people.

How much is there now? 1 2 3 4 5 6 7 8 9 10
How much would you prefer?  1  2  3  4  5  6  7  8  9  10

2. The feeling of worthwhile accomplishment in your position.
How much is there now?  1  2  3  4  5  6  7  8  9  10
How much would you prefer?  1  2  3  4  5  6  7  8  9  10

3. The feeling of security in your position.
How much is there now?  1  2  3  4  5  6  7  8  9  10
How much would you prefer?  1  2  3  4  5  6  7  8  9  10

4. The prestige with which your position is held by persons from inside the organization.
How much is there now?  1  2  3  4  5  6  7  8  9  10
How much would you prefer?  1  2  3  4  5  6  7  8  9  10

5. The opportunity for personal growth and development in your position.
How much is there now?  1  2  3  4  5  6  7  8  9  10
How much would you prefer?  1  2  3  4  5  6  7  8  9  10

6. The opportunity for independent thought and action in your position.
How much is there now?  1  2  3  4  5  6  7  8  9  10
How much would you prefer?  1  2  3  4  5  6  7  8  9  10

7. The prestige with which your position is held by persons from outside the organization.
How much is there now?  1  2  3  4  5  6  7  8  9  10
How much would you prefer?  1  2  3  4  5  6  7  8  9  10
8. The opportunity to develop close friendships in your position.

How much is there now?  
1 2 3 4 5 6 7 8 9 10

How much would you prefer?  
1 2 3 4 5 6 7 8 9 10

9. The feeling of self-fulfillment obtained from your position (that is, the feeling of being able to use one's unique capabilities and realizing one's potentialities.)

How much is there now?  
1 2 3 4 5 6 7 8 9 10

How much would you prefer?  
1 2 3 4 5 6 7 8 9 10

10. The regard or value in which you hold your position.

How much is there now?  
1 2 3 4 5 6 7 8 9 10

How much would you prefer?  
1 2 3 4 5 6 7 8 9 10

11. The opportunity, in your position, for participation in the setting of goals.

How much is there now?  
1 2 3 4 5 6 7 8 9 10

How much would you prefer?  
1 2 3 4 5 6 7 8 9 10

12. The authority connected with your position.

How much is there now?  
1 2 3 4 5 6 7 8 9 10

How much would you prefer?  
1 2 3 4 5 6 7 8 9 10

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

How much is there now?  
1 2 3 4 5 6 7 8 9 10

How much would you prefer?  
1 2 3 4 5 6 7 8 9 10
APPENDIX D

ASPIN-WELCH TEST FOR DIFFERENCE BETWEEN TWO MEANS

The Aspin-Welch test is designed to test the difference between two sample means where the sample size is small and the standard deviation is unknown and possibly unequal. The test compares the two sample means using the "t" distribution and establishes significant limits to determine if the two means are from similar populations.

First, the sample means are calculated as:

$$\bar{x} = \frac{\sum x}{n}$$

Example:

Sample (1): 2.5; 3.2; 2.7; 2.9; 3.0
Sample (2): 2.4; 2.6; 3.2; 3.1; 2.6

$$\bar{x}_1 = 2.8 \quad \bar{x}_2 = 2.7$$

The standard deviation is estimated by

$$s_1^2 = \frac{\sum (x_1 - \bar{x}_1)^2}{n_1 - 1} \quad \text{and} \quad s_2^2 = \frac{\sum (x_2 - \bar{x}_2)^2}{n_2 - 1}$$

$$s_1^2 = 0.075 \quad \text{and} \quad s_2^2 = 0.13$$

Then we test

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s_1^2/n_1 + s_2^2/n_2}}$$

where the degrees of freedom are found by:

$$n = \frac{1}{\frac{c^2}{n_1 - 1} + \frac{(1 - c)^2}{n_2 - 1}}$$

and

$$c = \frac{s_1^2/n_1}{s_2^2/n_1 + s_1^2/n_2}$$

80.
Using a t distribution table for .025 point the allowable t value is 12.706; therefore we accept that both sample means are from the same population, as the calculated value of .143 falls within the distribution value.