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A Study of Job Satisfaction and Motivation

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by

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CHAPTER I

INTRODUCTION

Background and Reasons for Study

Because of the high rate of attrition, tardiness, increasing wages and salaries, and declining productivity, employers are greatly concerned about placing the right man in the right job.

Turner and Lawrence (1965) developed a method of measuring job attributes calling it a "Requisite Task Attributes Index" shortened to R T A. They implemented their measuring method in a varied sample of industrial jobs drawn from eleven industries. The researchers predicted worker's response, both subjective and behavorial, across differing technologies.

Their research started with the concept that every industrial job contained technologically determined task attributes which would influence worker's response. By "task attributes" Turner and Lawrence meant such characteristics of the job as the amount of variety, autonomy, responsibility, and interaction with others.

"Worker's response" can be defined as a spectrum of responses stretching from mild satisfaction to enthusiastic involvement in one's work, and negatively from mild dissatisfaction to obsessive dislike, behaviorally expressed in absenteeism, turnover, sabotage, or strike.

Two hypotheses were tested by Turner and Lawrence. In each the attributes of each job studied and expressed in the R T A Index were taken as independent variables. On the other hand, the dependent variables were worker's responses measured by an index of high or low attendance at work and by subjective expressions of satisfaction.

The two major hypotheses in their study were: (1) That job satisfaction will be high on high R T A Index jobs, that is jobs with high autonomy, responsibility, interaction opportunities, and the like, whereas satisfaction will be low on low R T A Index jobs, and (2) that there will be high attendance (low absenteeism) when R T A Index scores are high, and low attendance on low R T A jobs.

The authors called jobs with high R T A indices examples of "complex" work; jobs with low R T A indices examples of "simple" work. Their findings indicated that town or rural workers tend to react satisfactorily or positively to more complex work requiring the excercise of greater skill and acceptance of more responsibility. On the other hand, city workers tended to react negatively to this kind of work but positively to simpler tasks requiring the excercise of less skill and acceptance of less responsibility. Also, a positive correlation exsisted between high R T A jobs and attendance of the population as a whole, but the correlation was far higher for the town than for the city group.

Table 1 in Appendix A indicates the number of absences in relation to the Requisite Task Attribute Index. The three categories (high, medium, and low) of R T A Index scores were established to be roughly equal for the population. However, most workers for who attendance records were not available were on medium and low R T A jobs.

Geoffrey K. Ingham (1970) in a study of the size of the industrial organization and worker behavior illustrated the relationship of the size

of the organization and skilled and semi-skilled labor to absenteeism, labor turnover and the stability rate. The stability rate refers to the proportion of long service workers (over 10 years) in the organization.

Ingham as did Turner and Lawrence measured absenteeism from the number of times, not days, men had been absent from work in a one year period. Thus, a six-month absence and a one-day absence both count as one absence (Ingham, 1970).

The relationship between organizational size, level of skill, absenteeism, and labor turnover is illustrated by Tables 2, 3, 4, and 5 in Appendix A (Ingham, 1970, pp. 21-24).

These studies indicate that there is a relationship between the level of the task and absenteeism, turnover, and job satisfaction. Thus, employers should be more conscious about matching the right man to the right job because increased absenteeism and labor turnover decreases productivity and increases training costs which in the end reduces profits. In other words, fitting round pegs in round holes and square pegs in square holes can only be achieved after the pegs are carefully examined and understood. The same concept is true of people. Therefore, individuals must be studied closely to determine why they react a particular way in a given situation.

Many studies have been done to ascertain how to motivate operatives in a certain task, and repeatedly experiments have been conducted to determine what factors satisfies and motivates individuals in a given job. However, the phenomenon of why an individual performing a particular task in an institution is motivated and satisfied by that activity while another person performing the same task is neither motivated nor satisfied has never been satisfactorily investigated.

This study was conducted to answer that question. Because when-

ever an occurrence is unexplained it will create a problem that will remain with mankind until someone takes the inititive and decides to solve that problem and make a contribution to the community.

The Problem of the Study

In an industry or anywhere else when a job must be performed, it is important for management to understand why a person prefers a particular task over another. If this can be determined, the job can be designed to best meet the goals of that individual. When the operative's goals have been realized he is highly motivated and satisfied with his work. When this happens the institution's objectives are also being met indirectly and the operative will provide his greatest contribution.

The problem of this study is to determine why a person who performs a particular function in an institution is satisfied and motivated in that task while another person performing the same job is neither satisfied nor motivated.

The Hypothesis

The hypothesis of this study was stated as follows: The motivation and satisfaction of an operative in performing a particular task in an institution is directly related to his socio-economic and educational background.

Basic Assumptions

The assumptions were as follows:

1. Many individuals are motivated and satisfied while performing tasks in an institution
2. Many individuals are not motivated and satisfied while performing a task

3. Individuals have varying socio-economic and educational backgrounds
4. An individual's socio-economic and educational background can be measured and quantified
5. Satisfaction and motivation can be measured and quantified
6. Individuals are motivated and satisfied in a particular task for different reasons
7. If an individual dislikes a job then he will not be satisfied and motivated in that job
8. If an individual likes a job then he will be both satisfied and motivated in that job
9. Individuals performing different task levels are motivated and satisfied for different reasons

Limitations and Controls

Limitations and controls were placed on this study as follows:

1. Sampling techniques were used to determine the economical and feasible sample space
2. A validated and standardized questionaire was used to provide control from entervening variables
3. The interview was used in conjunction with the questionaire to prevent prejudice and bias from entering the study
4. The population was a random sample from Bulloch County in southeast Georgia
5. The investigation was limited to the geographical area of Bulloch County
6. The type of jobs and industries studied were only those related to Bulloch County

7. Some of the responses on the questionaire were influenced directly by cultural factors which made the subjects respond in a particular manner

Definitions of Terms

The following terms are operationally defined in alphabetical order:

1. The D response on the questionaire indicates that the individual dislikes that particular task
2. Goals are targets toward which motives are directed or incentives referred to as hoped for rewards
3. The I response on the questionaire indicates that the individual is indifferent toward that particular task
4. An institution is any body or group that employs people
5. The L response on the questionaire indicates that the individual likes that particular task
6. Motivation is the will to do
7. Motives are needs, wants, drives, desires or impulses within the individual
8. An operative is one who performs a particular job or task in an institution
9. Socio-economic background refers to the social values and customs and economic status of an individual
10. Subject refers to a participant in the study
11. A task is a work activity or job performed in an institution
12. Task level refers to certain tasks that are grouped together which are determined to be of equal difficulty

Summary

This study will investigate why certain people are motivated and satisfied when performing a task while others are not. In order to carry out this investigation both the questionaire and the interview will be used to measure the individuals attitudes toward his job satisfaction and motivation and to determine the individual's social and educational background.

The data obtained from these methods of research will be statistically tabulated to determine what relationship exists between an operative's socio-economic and educational background and his job satisfaction and motivation.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

A review of related literature was conducted to assure that this investigation would provide new knowledge. Job satisfaction and motivation have been investigated for many years, but existing data is not conclusive, especially in the area of individual differences.

Studies of Similar Nature and Design

Motivation of an individual in a particular situation is usually determined by his strongest need. A theory of motivation which helps explain the strength of certain needs was developed by Abraham Maslow (1954). Maslow felt that human needs arranged themselves into a hierarchy which determines how an individual is motivated at a given moment.

At the top of the hierarchy are the physiological needs. They are placed there because they tend to have the highest strength until they are somewhat satisfied. These are the basic human desires such as food, clothing and shelter which sustain life itself. A person's activity will probably remain at this level of the hierarchy until these basic wants are satisfied to the degree needed for sufficient operation of the body, and the other levels will provide him with little motiva-

tion.

However, after these physiological needs have been fulfilled other levels of desires become important and these motivate and dominate the behavior of the individual. When these wants are somewhat satiated, other needs emerge, and so on down the hierarchy.

Once the pysiological needs become gratified the need to be free of the fear of physical danger and deprivation of the basic physiological wants become predominant. These desires are referred to as the need for self-preservation or the safety or security needs. Man is not only concerned with the present, but he is also worried about the future. Will he be able to provide food and shelter tomorrow and the next day? If an individual's safety or security is in danger, other things seem unimportant.

The desire that emerges as dominant in Maslow's need structure after the physiological and security needs are satisfied is the need for affilation or acceptance. Inherent in man is the need to belong and to be accepted by others. When affiliation wants become dominant a person will strive for meaningful relations with others.

After an individual begins to fulfill his need to belong, he generally wants to become more than just a member of a group. He then feels the need for esteem - both self esteem and recognition from others. Most people have a need for a high evaluation of themselves that is firmly based in reality - recognition and respect from others. Satisfaction of these esteem needs produce feelings of self confidence, prestige, power, and control. When this desire begins to be satiated one begins to feel that he is useful and has some effect on his enviornment.

The need that becomes prepotent once the esteem wants are sat-

isfied is the need to maximize ones potential, the need for self actulization. As Maslow put it, "What a man can be, he must be". Self actualization is then the desire to become what one is capable of becoming. Maslow felt that one level of needs did not have to be completely satisfied before the next level emerges as the most important. In reality, most people in our society tend to be partially satisfied at each level and partially unsatisfied, with greater satisfaction tending to occur at the affilation, esteem, and self actualization levels.

Another theory of motivation was developed by Douglas McGregor (1960). According to McGregor's "Theory X - Theory Y", traditional organization with its centralized decision-making, superior - subordinate pyramid, and external control of work is based upon assumptions about human nature and human motivation.

Theory X assumes that most people prefer to be directed, are not interested in assuming responsibility, and want security above all. This philosophy is accompanied by the belief that people are only motivated by money, fringe benefits, and the threat of punishment.

When Theory X is adopted by management supervisors tend to structure, control, and closely supervise their employees. These managers feel that external control is clearly appropriate for dealing with unreliable, irresponsible, and immature people.

After developing Theory X McGregor felt that this theory was not appopriate for many situations in the working enviornment of today, therefore McGregor, drawing heavily from Maslow's hierarchy of needs, concluded that Theory X assumptions about the nature of man are generally inaccurate and that management approaches which develop from these assumptions will often fail to motivate individuals to work toward organizational goals. Management by direction and control may not succeed, according

to McGregor, because it is a questionable method for motivating people whose physiological and safety needs are reasonably satisfied and whose affilation, esteem, and self actualization needs are becoming predominant.

Because McGregor felt that management wanted practices based on more accurate understanding of the nature of man and human behavior and motivation he developed an alternate theory of human behavior called Theory Y. The theory assumes that people are not, by nature, lazy and unreliable. It postulates that man can be basically self-directed and creative at work if properly motivated. Therefore, it should be an essential task of management to unleash this potential in man. The properly motivated worker can achieve his own goals best by directing his own efforts toward accomplishing organizational goals.

Managers who accept the Theory Y image of human nature, do not usually structure, control, or closely supervise the work enviornment for employees. Instead, they attempt to help their employees mature by exposing them to progressively less external control, allowing them to assume more and more self-control. Employees are able to achieve the satisfaction of affilliation, esteem, and self actualization needs within this kind of environment, often neglected on the job. To the extent that the job does not provide need satisfaction at every level, today's employee will usually look elsewhere for significant need satisfaction. This helps explain some of the current problems management is facing in such areas as turnover and absenteeism. McGregor argues that this does not have to be the case.

Management is interested in work and McGregor feels work is as natural and can be as satisfying for people as play. Afterall, both work and play are mental and physical activity; consequently, there is

no inherent difference between work and play. In reality though, particularly under Theory X management, a distinct difference in need satisfaction is discernible. Whereas play is internally controlled by the individual (he decides what he wants to do) work is externally controlled by others (the worker has no control over his job). Thus, management and its assumptions about the nature of man have built in a difference between work and play which seems unnatural. As a result, people are stiffled at work, and hence, look for excuses to spend more and more time away from the job in order to satisfy their esteem and self actualization needs (provided they have enough money to satisfy their physiological and safety needs). Because of their conditioning to Theory X types of management, most employees consider work a necessary evil rather than a source of personal challenge and satisfaction.

However, it does not have to be this way especially in organizations where cohesive work groups have developed and where the goals of groups parallel organizational goals. In such organizations, there is high productivity and people come to work gladly because work is inherently satisfying.

Frederick Herzberg of Case Western Reserve University developed a motivation-hygiene theory (1966) which has broad implications for management and its efforts toward effective utilization of human resources.

Herzberg, in developing his motivation-hygiene theory, seemed to sense that scholars like McGregor and Maslow were touching on something important. Knowledge about the nature of man, his motives and needs, could be invaluable to organizations and individuals.

To industry, the payoff for a study of job attitudes would be increased productivity, decreased absenteeism, and smoother working re-

lations. To the individual, an understanding of the forces that lead to improved morale would bring greater happiness and greater self realization (Herzberg, Mausner, Synderman, 1959).

Herzberg's motivation-hygiene theory resulted from the analysis of an initial study by Herzberg and his colleagues at the Psychological Service of Pittsburg. The study involved extensive interviews with some 200 engineers and accountants from eleven industries in the Pittsburg area. In the interviews, they were asked about what kinds of things on their job made them unhappy or dissatisfied.

In analyzing the data from these interviews, Herzberg concluded that man has two different categories of needs which are essentially independent of each other and affect behavior in diffenent ways. He found that when people felt dissatisfied about their jobs and were concerned about the enviornment in which they were working. On the other hand, when people felt good about their jobs it had to do with the work itself. Herzberg called the first category of needs hygiene factors because they describe man's environment and serve the primary function of preventing, job dissatisfaction. He called the second category of needs motivators since they seemed to be effective in motivating people to superior performance.

Company policies and administration, supervision, working conditions, interpersonal relations, money, status, and security may be thought of as hygiene factors. These are not an intrinsic part of the job, but are related to the conditions under which the job is performed. Hygiene factors produce no growth in worker output capacity; they only prevent losses in worker performance due to work restriction.

Satisfying factors that involve feelings of achievement, professional growth, and recognition that one can experience in a job which

offers challenge and scope are referred to as motivators. Herzberg used this term because these factors seem capable of having a positive effect on job satisfaction often resulting in an increase in ones total output capacity.

Zaleznik, Christensen, and Roethlisberger (1958) developed three theories concerning worker motivation, productivity, and satisfaction. They were: (1) a theory of external rewards, (2) a theory of distributive justice, and (3) a theory of social certitude.

In developing the theory of external and internal rewards, they examined previous research concerning what the determinants of worker motivation and how they might be related to one another. They differentiated external determinants from internal determinants and reduced them for purposes of prediction and verification into roughly two classes: (1) external rewards and (2) internal rewards. External rewards were treated as those rewards which satisfied the workers' needs for job status and recognition. Internal rewards were treated as those rewards which satisfied his needs for support, interaction, approval, and belonging. They stated in hypothetical form the consequences in terms of productivity and satisfaction which were expected from four conditions; (1) combined high external and internal rewards, (2) high external rewards and low internal rewards, (3) low external rewards, and (4) both low external and internal rewards.

The external needs include the need for economic rewards such as pay and job security. Through these economic rewards the individual satisfies many physical and biological needs which are elementary in human survival and adaptation. The external needs also include the necessity for status and to engaged in interesting work; that is to satisfy the desire to do work that tests competence and expresses some creative

ability in individuals.

The internal needs or rewards include the need for belonging to a group; for associating with other human beings; for expressing and sharing in sentiments of loyalty, friendliness, and affection; for giving and receiving emotional support; for receiving the marks of group approval which they include in the ordinary terms of prestige and esteem.

Their research findings indicated a persistent uniformity; group membership or reward by the group was a major determinant of worker productivity and satisfaction.

However, the aspects of the reward theory which specified the motivational effects of reward by management did not produce uniformities comparable to those produced by the concept of reward by the group. Zaleznik, Christensen and Roethlisberger held group membership constant and no difference appeared in productivity and satisfaction among regular group members who were being favorably or unfavorably rewarded by management. This result remained unchanged whether they measured reward by management by the reward-investment index or by job status. The only possible uniformity in the data appeared when analyzing the productivity patterns of those workers who were not being rewarded by the group. In this case, the workers with a favorable reward-investment relationship tended to have low productivity while those with an unfavorable reward investment relationship tended to have high productivity on the job. The investigators found little evidence to suggest that the high productivity resulted from a preceived goal or expectation of increased reward by management. The workers in question did not express the sentiments of individuals seeking increased pay as an immediate goal. Instead, their sentiments reflected a sense of moral duty to work hard - a task centered orientation.

Given these findings, Zaleznik, Christensen, and Roethlisberger came to the conclusion that rewards by management, at least as they are traditionally conceived in industry have limited motivational force particularly in comparison with rewards in group membership. This conclusion seems to be in violation of the strong concept underlying management thinking that economic rewards motivate workers in factory settings. Sharp changes in the distribution of rewards by management do produce many changes in worker behavior such as output. It is questionable whether this change in the distribution of rewards can produce a continuing motivational effect.

The other two theories of motivation developed by Zaleznik, Christensen, and Roethlisberger will be discussed very briefly in the following paragraphs.

The theory of distributive justice differentiates those status factors that the worker brought to the job from those that he got from the job. They called the former "social investments" and the latter "external rewards". According to this theory, if a member's investments are higher than those of another, distributive justice requires that his rewards should be higher, too. In terms of this interpretation they hypothesized the expected productivity and satisfaction characteristics of a member's behavior in terms of the degree to which he realized this external condition of distributive justice in relation to other members of the group.

After careful study of the theory of distributive justice their main finding was essentially negative: there was no association between the workers' rank on the reward-investment index and their degree of satisfaction. They had predicted that those workers who were high on the reward-investment index would tend to highly satisfied while workers

low on the index would express complaints. However, research is still being conducted in this area, since the evidence supporting this theory is not conclusive.

In the theory of social certitude, Zaleznik, Christensen, and Roethlisberger investigated the degree to which a member's social status occupied the same position on all his social status factors. According to this theory the better established a member's social status is, the more he will enjoy the external conditions of social certitude and then the more secure he will be in his relation to other persons. In terms of this interpretation they hypothesized the expected relationship between membership characteristics, (such as interaction, participation, and the like), and the degree to which an individual realizes this external condition of social certitude in comparison with other members of the group.

There was no conclusive evidence to support this theory after this investigation was completed. Further clarification of the determinants of group membership, productivity, and satisfaction and their implications for a theory of motivation must await additional research.

In a study conducted by Ian C. Ross and Alvin Zander (1957) it was established that the degree of satisfaction of certain personal needs supplied by a person's place of employment has a significant and direct relationship to his continuing to work for that company. These personal needs are for recognition, autonomy, a feeling of doing work that is important and evaluation by fair standards. Also, knowing important people in the organization is related to continued employment. There were some indications that anxiety develops in those employees who stated that their needs for autonomy and fair evaluations were not satisfied.

In addition to the degree of need satisfaction provided by the job, the investigators examined the degree to which the employment situation limits satisfactions which the worker can receive from his family and from his community. Ross and Zander found that the extent to which the job inteferes with family and community satisfactions is related to turnover as strongly as the failure to receive need satisfactions on the job. Interference with off-the-job sources of satisfactions was not related to the experience of dissatisfaction on the job. People resign because: The job itself does not satisfy needs and it also keeps them from receiving satisfactions from other sources. Ross and Zander concluded that workers whose personal needs are satisfied on the job are more likely to remain in the organization.

Edward E. Lawler, III (1969) completed a study on job design and employee motivation with focus on the reasons for expecting changes in job design and job enlargement which affect employee motivation and performance.

He indicated that when jobs are structured in a way which makes intrinsic rewards appear to result from good performance then the jobs themselves can be very effective motivators. In addition, if job content is to be a source of motivation, the job must allow for meaningful feedback, and test the individual's valued abilities and allow a great amount of self control by the job holder. Jobs must be enlarged on both the vertical and horizontal dimensions for this to happen. The horizontal dimension refers to the number and variety of the operations that an individual performs on the job. The vertical dimension refers to the degree to which the job holder controls the planning and execution of his job and participates in the setting of organizational policies. It was also predicted that job enlargement is more likely to lead to

increased quality than to increased productivity. A review of the literature on job enlargement generally tended to confirm these predictions.

In a literature search, reports of ten studies were found where jobs had been enlarged on both the horizontal and vertical dimensions. Table 6 in Appendix B presents a brief summary of the results of these studies (Lawler, 1969, p. 433).

Summary

All the literature that relates to this study concerning job satisfaction and motivation deals primarily with the job itself as the independent variable. Very little if any consideration was given to the human element. This inquiry will attempt to relate job satisfaction and motivation to the differences in the individuals themselves. These differences caused by differing educational and socio-economic backgrounds.

CHAPTER III

THE INVESTIGATION

Introduction

This investigation was conducted to determine why an operative who performs a particular function in an institution is satisfied and motivated in that task while another person performing the same job is neither satisfied nor motivated.

The hypothesis for this investigation was as follows: The motivation and satisfaction of an operative in performing a particular task in an institution is directly related to his socio-economic and educational background.

The investigation was concerned with the relationship between several variables. The manipulated, or independent variable, was the educational and socio-economic backgrounds of the operatives participating in the study. The results, or the dependent variable, in the investigation was job satisfaction and motivation of that operative.

A questionaire was used to obtain data about each subject's job preferences and their socio-economic and educational backgrounds. Each participant was interviewed to provide additional information about himself that could not be conveyed to the researcher on the questionaire.

These techniques of research were employed in this investigation to insure the validity of the study so that conclusions and recommendations can be drawn that will add to the growth of knowledge in the society.

The Questionaire

General

The questionaire was developed to gather data about an individual's job satisfaction and motivation while performing a particular job in an institution and to determine that person's socio-economic and educational background.

The questionaire was divided into two parts consisting of eight pages and a cover letter describing the reasons and purpose for the questionaire.

The first section was designed to gather data concerning the subject's job satisfaction and motivation that he receives while performing a given task. This part listed one hundred and fifty different jobs which the participant indicated how he would feel about performing an activity by circling either (1) like, (2) dislike, or (3) indifferent. The tasks varied from very technically complex activities to the simplest of jobs. The questionaire was comprehensive and covered most all types of jobs found in society. The questionaire was not designed for any particular educational level, sex group, or age span but was created for the administration of any operative performing any job within an institution.

There are two interest inventories which are somewhat similar to the questionaire developed and used in this investigation.

The Minnesota Vocational Interest Inventory (MVII) is an instrument modeled after the Strong Vocational Interest Blank (SVIB). It uses

tradesmen-in-general as the reference group, rather than professional and business occupations as does the SVIB. The MVII is designed to be used primarily with subjects who are not planning to go to college and is considered by most authorities as a valuable tool for determining the interest patterns of person's planning to enter skilled, semi-skilled and unskilled occupations (Brown, 1968). The MVII is illustrated in Appendix C.

The Strong-Campbell Interest Inventory merged from the Strong Vocational Interest Blank measures interests of subjects in professional and business related jobs in a general manner and shows some kinds of work that a person might be comfortable performing (Brown, 1970). A sample of this inventory is in Appendix D.

The second portion of the questionaire used in this study was a personal data sheet which provided a historical background of the subject. This was used to categorize his socio-economic and educational background as either (1) high, (2) low, or (3) medium. Appendix E contains a copy of the complete questionaire used in the investigation.

Validation Test

A validity test was conducted prior to administering the questionaire in the study. The test was conducted by interviewing thirty subjects at random from several different types of industries. In the interview the participants were asked personal questions about their historical background in order to determine their basic values for the development of answers to be used on the questionaire. The subjects were also asked what type of jobs they held at the present and if they felt that they were satisfied and motivated with their current occupation. If the individual answered in the negative then they were asked what type of job would they prefer to have in order to have total job satisfaction and

motivation. After the interview the questionaire was administered to each participant. Another interview was held with the subject's supervisor. In this meeting the supervisor was asked if he felt that the subject was satisfied and motivated in his particular job and to give an appraisal of the employee. After this step was completed each subject's personnel record was examined to obtain his past appraisals and to take a look at his punctuality record. Tardiness, absenteeism, and productivity was correlated with job satisfaction and motivation. If an individual was continually absent or tardy and his productivity was below average then it was concluded that the person was neither motivated nor satisfied in his present job.

After the test was concluded the validity of the questionaire was established, since 92 percent of all the people who said that they were satisfied and motivated in their present job rated all tasks which were related to their present occupation as "Like". While 88 percent of all the subjects who said that they were dissatisfied and not motivated in their present job rated all the tasks that were directly related to their present occupation as "Dislike".

It was concluded that this questionaire collected the data which it was intended to - job satisfaction and motivation within an individual. If an operative enjoys performing a job then he is satisfied and motivated in that job, and the converse is true as well.

Reliability Test

The test-retest method was used to determine if the questionaire was reliable. The same thirty people given the validity test were given the questionaire again three months later. This time 94 percent of the subjects who were satisfied in their current occupation rated the activities relating to their present job as "Like", while 82 percent of the

individuals who were dissatisfied rated the activities relating to their present occupation as "Dislike".

This evidence showed that the questionaire was not only valid but was reliable as well. Thus, it was concluded that this questionaire was suitable for gathering the data.

The Interviews

Each subject was interviewed so that the reason for his answers on the questionaire could be fully understood by the investigator. In the interview any unusual bias on behalf of the subject could be detected and eliminated from the study. Data from subjects exhibiting the "Hawthorne Effect" could then be eliminated from the collection of data. The primary reason for the interview was to allow the researcher to further understand the subjects' responses. This was necessary so that the subject's social values and beliefs, which were not readily apparent from the questionaire, could be determined. After the interview the subjects could be grouped according to their socio-economic and educational background ranging from high to low. The factors which determined the subject's socio-economic level were: (1) extra-curricular activities, (2) religous values, (3) size of the family, (4) type of schools attended, (5) educational level of parents, (6) income level of parents, (7) citizenship, and (8) other items covered in the historical data section of the questionaire already mentioned.

The Population

The population chosen for the study worked in Bulloch County, Georgia. Subjects were taken at random from different industries in the area. These industries are listed in Table 7 in Appendix F. The following computations indicate how the size of the sample was determined.

First, the percision (p) of the sample had to be determined by dividing the number of incorrect responses (C) on the questionaire by the population (n) (Vance and Neter, 1956).

$$p = C/n$$

$$p = 25/200$$

$$p = .125$$

After this calculation was made, then the estimated standard deviation could be determined with the following formula (Vance and Neter, 1956).

S(p) = estimated standard deviation of p and

N = size of the universe then

$$S(p) = \sqrt{\frac{N-n}{N}}\sqrt{\frac{p(1-p)}{n-1}}$$

$$= \sqrt{\frac{791-200}{791}}\sqrt{\frac{.125(1-.125)}{200-1}}$$

$$= \sqrt{.75}\sqrt{.00055}$$

$$= .865 \times .0235$$

$$S(p) = .02$$

Then a confidence interval of three standard deviations was derived. Three sigma confidence limits equal:

$$p \pm 3S(p)$$

$$.125 \pm 3(.02)$$

$$.125 \pm .06$$

The interval is from .065 to .185. It can be stated with confidence of being correct that the proportion of errors on questionaires is somewhere between 6.5 percent and 18.5 percent.

The size of the sample can be determined from the following formula (Vance and Neter, 1956).

$$n = \sqrt{\frac{P(1-P)}{o^2)p) + \frac{P(1-P)}{N}}}$$

where o^2 is the actual standard deviation

By substituting the estimated standard deviation S(p) already calculated for the actual standard deviation the following formula is derived.

$$n = \sqrt{\frac{P(1-P)}{S(p)^2 + \frac{P(1-P)}{N}}}$$

In this formula P equals .5 since this probability yields the largest sample size for any given precision specification (Vance and Neter, 1956).

$$n = \sqrt{\frac{.5(.5)}{(.02)^2 + \frac{.5(.5)}{791}}}$$

$$n = \sqrt{\frac{.25}{.0004 + .000316}}$$

$$n = \sqrt{\frac{.25}{.000716}}$$

$$n = 349$$

The method of obtaining a random sample of 349 from Bulloch County is illustrated in Table 7 in Appendix F.

By using statistical sampling techniques a random sample was obtained from the universe. All the data used in the investigation was obtained from this sample.

Data Collection and Summarization

The data used to test the hypothesis was obtained from the questionaire and the interview that has already been discussed. This information is summarized in Table 8 in Appendix G for the entire sample. Table 8 indicates the percentage score for each question on the question-

aire. This percentage score was derived by using the following formula:

$$PS = \frac{L + I + D}{N}$$

simplified:

$$PS = \frac{L - D}{N}$$

where:

PS = Percentage score

L = Like responses

D = Dislike responses

N = Size of sample

Table 9 in Appendix G indicates the raw score for each question on the questionaire. Every like, indifferent, and dislike response for every question on the questionaire is recorded in this table. These responses are summed up for the table by categories of socio-economic and educational background with the aid of the following formula:

$$\sum_{i=1}^{n} (L-D)_i = (L - D)_1 + (L - D)_2 + (L - D)_3 + \ldots. (L - D)_n$$

This total raw score will be used in Chapter IV for hypothesis testing.

Tables 10 and 11 in Appendix G indicate the number of responses for like, dislike, and indifferent by categories of socio-economic and educational background for every task on the questionaire for female and male subjects respectively. This data will be used to make some interesting observations in Chapter V.

Data Analysis

The analysis of the data will be conducted through the use of statistics. These statistics will be used to decide whether an observed difference between two sample proportions, or percentages, is significant

or whether it may reasonably be attributed to chance. This question will be resolved with the following theory of differences between proportions: if x_1 and x_2 are the number of "successes" observed, respectively, in large independent random samples of size n_1 and n_2, and if p_1 and p_2 are the corresponding probabilities for success in individual trials, then the sampling distribution of the statistic

$$\frac{x_1}{n_1} - \frac{x_2}{n2}$$

the difference between the sample proportion, can be approximated closely with a normal curve whose mean is p_1-p_2 and whose standard deviation is

$$\sqrt{\frac{p1(1-p1)}{n1} + \frac{p2(1-p2)}{n2}}$$

(Freund, 1960).

Through the use of a normal curve (see Appendix H) representing the sampling distribution of the difference between two proportions the following criteria for testing the hypothesis can be formulated:

H_0 = Null hypothesis (no significant difference between the proportions)

H_1 = Alternate hypothesis (there is a significant difference between the proportions)

Reject the null hypothesis if $Z < -1.96$ or $Z > 1.96$;

Accept the null hypothesis or reserve judgement if

$-1.96 \quad Z \quad 1.96$, where

$$Z = \frac{\frac{x1}{n1} - \frac{x2}{n2}}{\sqrt{p(1-p)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

and where p is to be approximated with

$$p = \frac{x1 + x2}{n1 + n2}$$

and

p = proportion of successss

x = number of successes in sample

n = sample size

The formula for Z was obtained by subtracting from the observed difference between the two sample proportions the mean of its sampling distribution, namely, 0, and then dividing by the standard deviation (Freund, 1960).

These formulas will be used in Chapter IV to analyze the data and to test for the hypothesis.

Summary

The data for this investigation was collected from a random sample of subjects from different industries in Bulloch County, Georgia. Each subject completed a questionaire and participated in a personal interview. These techniques of research were used to gather data about each subject's socio-economic and educational background to determine if there was a direct relationship between these variables and job satisfaction and motivation.

CHAPTER IV

ANALYSIS OF DATA

Introduction

The data analyzed were job satisfaction and motivation and the socio-economic and educational level of subjects performing various tasks within an institution. This information was gathered with a questionaire and a personal interview administered to each subject.

The analysis was accomplished by statistically testing the following hypothesis: The motivation and satisfaction of an operative in performing a particular task in an institution is directly related to his socio-economic and educational background.

The statistics used for hypothesis testing were discussed in detail in Chapter III.

Test for the Hypothesis

The hypothesis was tested by using the null hypothesis and an alternate hypothesis to determine if there was a significant difference between the proportions of the sample. First, high socio-economic and educational background was compared to low then to medium and finally medium socio-economic and educational background was compared to low as they relate to job satisfaction and motivation within an individual.

High socio-economic and educational background
Versus low socio-economic and educational background

This section will test if there was a significant difference between high socio-economic and educational background and low socio-economic and educational background as it relates to an operative's job satisfaction and motivation.

Through the use of the following statistical computations this can be determined:

$$P = \frac{X1 + X2}{N1 + N2}$$

$$P = \frac{1225 + 2657}{8100 + 8850}$$

$$P = .229$$

Then:

$$Z = \frac{\frac{1225}{8100} - \frac{2657}{8850}}{\sqrt{(.229)(.771)(1/8100 + 1/8850)}}$$

$$Z = 18.13$$

Criteria:

Reject null hypothesis if $Z<-1.96$ or $Z>1.96$

Accept null hypothesis if $-1.96<Z<1.96$.

Therefore, the null hypothesis was rejected and the alternate hypothesis accepted. The rejection region was 5 percent of the normal distribution (see Appendix H). There was a significant difference in the job satisfaction and motivation of an operative who has a high socio-economic and educational background and one who has a low socio-economic and educational background.

High socio-economic and educational background
Versus medium socio-economic and educational background

The next step in testing the hypothesis is to test the significance between high socio-economic and educational background and medium socio-economic and educational background by using the same formulas. The hypothesis was tested with the following computations:

$$P = \frac{X1 + X3}{N1 + N3}$$

$$P = \frac{1225 + 627}{8100 + 18,450}$$

$$P = .07$$

And:

$$Z = \frac{\frac{X1}{N1} - \frac{X3}{N3}}{\sqrt{p(1-p)(1/n1 + 1/n3)}}$$

$$Z = \frac{\frac{1225}{8100} - \frac{627}{18,450}}{\sqrt{(.07)(.93)(1/8100 + 1/18,450)}}$$

$$Z = 34.58$$

The null hypothesis was rejected since 34.58 is outside the range of $Z > -1.96$ or $Z < 1.96$. Therefore, it was concluded that there was a significant difference in the job satisfaction and motivation of an individual with a high socio-economic and educational background and one who has a medium socio-economic and educational background.

Medium socio-economic and educational background
Versus low socio-economic and educational background

The final step in testing the hypothesis was the test for significance between medium socio-economic and educational background and low socio-economic and educational background utilizing the same formulas as steps 1 and 2. The calculations were as follows:

$$P = \frac{X2 + X3}{N2 + N3}$$

$$P = \frac{2657 + 627}{8850 + 18,450}$$

$$P = .12$$

And:

$$Z = \frac{\frac{X2}{N2} - \frac{X3}{N3}}{\sqrt{p(1-p)(1/N2 + 1/N3)}}$$

$$Z = \frac{\frac{2657}{8850} - \frac{627}{18,450}}{\sqrt{(.12)(.88)(1/8850 + 1/18,450)}}$$

$$Z = 63.4$$

Since 63.4 is outside the range of $Z > -1.96$ or $Z < 1.96$ the null hypothesis was rejected and the alternate hypothesis accepted. Hence, there was a significant difference in the job satisfaction and motivation of an individual with a medium socio-economic and educational background and one with a low socio-economic and educational background.

Summary

The completion of the analysis of data indicated that the hypothesis is valid, since the null hypothesis was rejected in all calculations of the hypothesis testing. This means that there was a significant difference between the levels of socio-economic and educational background as it relates to job satisfaction and motivation within an individual.

CHAPTER V

SUMMARY

Introduction

The purpose of this study was to determine why an operative who performs a particular function in an institution is satisfied and motivated in that task while another person performing the same job is neither motivated nor satisfied.

The hypothesis under study was as follows: The motivation and satisfaction of an operative in performing a particular task in an institution is directly related to his socio-economic and educational background.

After a careful collection of data and a scientific and statistical analysis of that data completed certain findings, recommendations, conclusions, and observations were reached. The results of this investigation will be discussed in the following sections of this chapter.

Findings

After analyzing the data and testing the hypothesis in Chapter IV it was found that there is a direct relationship between job satisfaction and motivation in an individual and his socio-economic and educational background.

This is evident from the finding that there was a significant difference in job satisfaction and motivation as the level of socio-economic and educational background varies. The greatest significant difference was between medium and low socio-economic and educational background with the next highest difference between high and medium and the lowest difference between high and low. This finding can be attributed to the fact that most of the tasks on the questionaire were more designed for the average individual, one with medium socio-economic and educational background. Thus, on this questionaire the greatest job satisfaction and motivation was exemplified by those subjects with medium socio-economic and educational backgrounds. The questionaire was designed in this manner to represent the same percentage found in the population.

Although the greatest significant difference was between medium and low socio-economic and educational background, it was consistently found that tasks which were loosely structured and not closely supervised were chosen by individuals with a high socio-economic and educational background as the jobs which were the most satisfying and provided the most motivation. These tasks also required more reasoning ability and problem solving skills, as well as, requiring more creative and decision making ability than the tasks most often chosen by the individuals with medium or low levels of socio-economic and educational backgrounds.

The jobs most often chosen by the operative's with a medium level of socio-economic and educational background were the tasks primarily concerned with the skilled craft job such as plumbers, electricians, welders, and mechanics. They also chose the lower level white collar jobs, such as, clerical and some lower management jobs, as the activities which gave them the most job satisfaction and motivation.

The individuals with the low socio-economic and educational back-

grounds seemed to consistently prefer jobs that were well defined and structured. A large number of the tasks chosen by this group were somewhat repetitive in nature and very closely supervised. Too, these jobs required very little ingenuity and decision making ability. However, some of this could be attributed to the fact that they may have felt that they were not qualified for the higher more complex tasks within an institution.

All these facts support the hypothesis that the motivation and satisfaction of an operative in performing a particular task in an institution is directly related to his socio-economic and educational background.

Conclusions

Since there is a significant difference in the level of job satisfaction of an operative as his socio-economic and educational background varies, and because an individual seems to receive his job satisfaction and motivation from different levels of tasks as his socio-economic and educational background varies, it can be concluded that the hypothesis under study in this investigation can be accepted as true. However, there does seem to be some exceptions to this hypothesis which can be attributed to cultural differences between the sexes. This will be discussed further in the next section. But in general the hypothesis stated as follows: The motivation and satisfaction of an operative in performing a particular task in an institution is directly related to his socio-economic and educational background; is accepted as being a true statement in this investigation.

Observations

While conducting the investigation some interesting observations were made concerning the differences in the way the tasks were

rated as to job satisfaction and motivation between the sexes. The jobs relating to the home such as cooking, sewing, and the like did not vary significantly from each level of socio-economic and educational background. This could be attributed to enviornmental conditioning. The women may have answered in this manner since they felt that they were expected to answer that way. However, the women with the highest socio-economic and educational background looked upon these domestic activities as hobbies and not as work.

The men seemed to chooose activities related to the physical use of the hands such as woodcarving, gardening, and the like. The men with the highest socio-economic and educational background, however, seemed to look upon these tasks as an advocation rather than a vocation.

The women were more satisfied and motivated in tasks relating to literature and the arts than were men in most cases in the medium and low levels of educational and socio-economic background while the men were more satisfied and motivated in problem solving and decision making tasks and seemed to prefer mathmatical concepts more so than women. However, on the high end of the socio-economic and educational scale this trend continued somewhat but was not as pronounced as on the lower levels. Again this could be attributed to enviornmental conditioning. The subjects may have responded in this way since they might have felt that this was the role that they were expected to play in society. In other words, cultural influences could have prompted these responses.

In any case, these observations are very interesting and provide for some speculation in the area of individual differences between the sexes. This is an area that could warrent future study, since a controlled investigation could clarify many of these somewhat controversial issues.

Recommendations

Getting the right person in the right job has been an age old problem, but it is now more important than ever because of the high cost of labor turnover. Therefore, this study recommends that before any jobs are filled within an institution that each applicant be carefully screened and his interest and educational and socio-economic background analyzed to determine what type of job that person would be most satisfied in. When the person is in a job that he is thoroughly satisfied and motivated in then his productivity goes up, labor turnover goes down, therefore reducing the costs of doing business for the firm and increasing their profits. When this is accomplished the cycle is in balance and everyone's goals are being met. The individuals goals are being met through enjoyable and rewarding work and the institution's goals are met through increased profits and greater community service and the economy and society as a whole is strengthened.

In addition, this study recommends future study in the area of individual differences between men and women on certain tasks. This is a topic very important in industry today with more emphasis being placed on equality of the sexes by government and the society as a whole. Some well controlled experiments in this area could answer some of the controversial issues on this subject that are being argued in industry at this time.

Finally, this study recommends that the hypothesis under investigation in this inquiry be accepted as a true statement: <u>The motivation and satisfaction of an operative in performing a particular task in an institution is directly related to his socio-economic and educational background</u>.

Summary

After gathering and summarizing all the data relating to this study, analysis of the data was conducted to determine if there was a relationship between job satisfaction and motivation and socio-economic and educational background in an individual. Once the data was analyzed scientifically through the use of statistics, it was determined that there was a direct relationship between these variables, and it was concluded that the hypothesis was true, and recommended that it be accepted as such. Also this study recommends future study in the area of differences in job satisfaction and motivation related to differences in sex. It is also recommended that employers be more concerned about differences in socio-economic and educational background when trying to match the "right" job to "right" individual.

APPENDIX A

TABLES ON ABSENTEEISM AND LABOR TURNOVER

TABLE 1

NUMBER OF ABSENCES IN RELATION TO REQUISITE TASK ATTRIBUTE INDEX
(403 WORKERS)

R T A Index	No available absence date	Number of Recorded absences in Previous 12 Months							Totals for whom absence data were available
		0	1	2	3	4-5	6-9	10+	
High	2 (3%)	43 (40%)	48 (53%)	20 (38%)	9 (22%)	10 (23%)	7 (20%)	10 (31%)	147 (36%)
Medium	25 (37%)	37 (34%)	23 (25%)	22 (41%)	16 (39%)	17 (40%)	11 (31%)	13 (41%)	139 (35%)
Low	40 (60%)	28 (26%)	20 (22%)	11 (21%)	16 (39%)	16 (37%)	17 (49%)	9 (28%)	117 (29%)
Totals	67	108	91	53	41	43	35	32	403

TABLE 2

TOTAL ABSENCE BY SIZE OF ORGANIZATION AND SKILL LEVEL

Size of Organization		Total absence	
		skilled	semi-skilled
A	5,000	3.98%	6.60%
B	3,000	5.00%	7.62%
C	63	3.18%	1.15%
D	26	2.01%	1.60%
E	24	0.29%	3.00%
F	16	2.20%	0.39%
G	12	0.60%	0.85%
H	9	0.64%	0.70%

TABLE 3

ABSENCES PER MAN PER YEAR BY SIZE OF ORGANIZATION AND SKILL LEVEL

Size of Organization		Absences per man	
		skilled	semi-skilled
A	5,000	1.95	2.01
B	3,000	1.64	3.50
C	63	1.80	0.70
D	26	0.61	0.75
E	24	0.22	1.20
F	16	1.01	0.50
G	12	0.32	0.36
H	9	0.40	0.75

TABLE 4

MEAN QUIT RATE BY SIZE OF ORGANIZATION AND SKILL LEVEL

Size of Organization		Mean Quit Rate (1963-5)	
		skilled	semi-skilled
A	5,300	28.6%	38.1%
B	3,000	17.7%	35.2%
C	63	16.9%	44.9%
D	26	21.6%	20.0%
E	24	33.3%	16.6%
F	16	26.2%	16.6%
G	12	16.6%	0%
H	9	11.1%	16.0%

TABLE 5

STABILITY RATE BY SIZE OF ORGANIZATION AND SKILL LEVEL

Size of Organization		Stability rate Over 10 years service	
		skilled	semi-skilled
A	5,000	45.0%	20.8%
B	3,000	38.5%	31.7%
C	63	30.5%	30.0%
D	26	37.5%	16.7%
E	24	16.7%	30.0%
F	16	16.7%	50.0%
G	12	100.0%	0%
H	9	66.6%	50.0%

APPENDIX B

STUDIES ON JOB ENLARGEMENT

TABLE 6

STUDIES ON JOB ENLARGEMENT

Research study	Higher quality	Higher productivity
Biggane and Stewart (1963)	yes	no
Conant and Killbridge (1965)	yes	no
Killbridge (1960)	yes	no
Davis and Valfer (1965)	yes	no
Davis and Werling (1960)	yes	yes
Elliott (1953)	yes	yes
Guest (1957)	yes	no
Kuriloff (1966)	yes	yes
Marks (1954)	yes	no
Rice (1953)	yes	yes
Walker (1950)	yes	no

APPENDIX C

THE MINNESOTA VOCATIONAL INTEREST INVENTORY

THE MINNESOTA VOCATIONAL INTEREST INVENTORY

The Minnesota Vocational Interest Inventory (MVII) is an instrument modeled after the Strong Vocational Interest Blank (SVIB). However, it uses tradesmen-in-general as the reference group, rather than professional and business occupations. It is intended for use with and application to male subjects who are not planning to go to college. Therefore, the scores relate primarily to those occupations for which college training is not needed.

Minnesota Vocational Interest Inventory

Circle the activity that you would enjoy performing most.

1. a. Catch up on your letter writing.
   b. Try to fix a kitchen clock.
   c. Discuss your philosophy of life with someone.

2. a. Type a letter for a friend.
   b. Play solitaire with playing cards.
   c. Take a broken lock apart to see what is wrong with it.

3. a. Solicit money for a community chest.
   b. Check typewritten material for errors.
   c. Install an electric meter box.

4. a. Tape a bruised ankle.
   b. Operate a bookkeeping machine.
   c. Solve mechanical puzzles.

5. a. Watch an appendicitis operation.
   b. Attend a lecture about television.
   c. Go to an exhibit of recent inventions.

6. a. String an aerial for a friend's radio.
   b. Try to win someone over to your side in an argument.
   c. Experiment with making candy without a recipe.

7. a. Be an office manager.
   b. Be a bookkeeper.
   c. Be an artist.

8. a. Do clerical work in an office.
   b. Cook short orders in a cafe.
   c. Sew on buttons.

9. a. Write a newspaper column of advice on personal problems.
   b. Take part in an athletic tournament.
   c. Take part in a public speaking contest.

10. a. Work in a hospital.
    b. Work as night watchman at a military supply depot.
    c. Work in a textile (clothing) factory.

11. a. Study chemistry.
    b. Study stenography (secretarial training).
    c. Study manual training.

APPENDIX D

THE STRONG-CAMPBELL INTEREST INVENTORY

STRONG-CAMPBELL INTEREST INVENTORY

This inventory is used to help you understand your work interests in a general way, and to show you some kinds of work you might be comfortable in. The following pages list many jobs, activities, school subjects, and so forth, and you are asked to show your liking or disliking for each. Your answers will be compared with the answers given by people already working in a wide range of jobs, and your scores will show how similar your interests are to the interests of these people. But this is not a test of your abilities; it is an inventory of your interests. Your scores will be presented to you later, on a special sheet called a profile, with information on how to understand the scores.

Part 1. Occupations

Many occupations are listed below. For each of them, show how you would feel about doing that kind of work.

Mark on the answer sheet in the space labled "L" if you think you would like that kind of work.
Mark in the space labled "I" if you are indifferent (that is, if you think you wouldn't care one way or another).
Mark in the space labeled "D" if you think you would dislike that kind of work.

Don't worry about whether you would be good at the job or about not being trained for it. Forget about how much money you could make or whether you could get ahead. Think only about whether you would like to do the work done in that job.

1 Actor/Actress
2 Advertising executive
3 Architect
4 Art museum director
5 Art teacher
6 Artist
7 Artist's model
8 Astronomer
9 Athletic director
10 Auctioneer
11 Author of children's books
12 Author of novels
13 Author of technical books
14 Auto mechanic
15 Auto racer
16 Auto sales
17 Bank teller
18 Beauty and haircare consultant
19 Biologist
20 Bookkeeper
21 Building contractor
22 Business teacher
23 Buyer of merchandise
24 Carpenter
25 Cartoonist
26 Cashier in bank
27 Chemist
28 Children's clothes designer
29 Church worker
30 City or state employee
31 City planner
32 Civil engineer
33 College professor
34 Computer operator
35 Corporation lawyer
36 Costume designer
37 Courtroom stenographer
38 Criminal lawyer
39 Dancing teacher
40 Dental assistant
41 Dentist
42 Designer, electronic equipment
43 Dietitian
44 Draftsman
45 Dressmaker/Tailor
46 Editor
47 Electrical engineer
48 Electronics technician
49 Elementary school teacher
50 Employment manager
51 Factory manager
52 Farmer
53 Fashion model
54 Florist
55 Foreign correspondent
56 Foreign service officer
57 Free-lance writer
58 Governor of a state
59 High school teacher
60 Home economics teacher
61 Hospital records clerk
62 Housekeeper
63 Hotel manager
64 Illustrator
65 Income tax accountant
66 Interior decorator
67 Inventor
68 Jet pilot

APPENDIX E

LETTER OF INTRODUCTION AND QUESTIONAIRE

May 25, 1975

Dear Friend:

You are about to participate in a study designed to investigate job satisfaction and motivation in an individual. The study is conducted for Georgia Southern College to be submitted as a thesis in partial fulfillment of the requirements for the Degree of Master of Technology.

All the information obtained in this investigation will be held in the strictest confidence and will be used only for the purpose of this study.

Attached you will find a questionaire. Please fill this out to the best of your ability answering every question.

Your cooperation in this matter is greatly appreciated. Thank you very much.

Sincerely,

Carl F. Martin

Carl F. Martin

This questionaire is designed to measure your interests and is not a test of your abilities.

For each of the following activities circle either L for Like, I for Indifferent, or D for Dislike to show how you would feel about performing that job or activity. Don't worry about whether you would be good at it or whether you are trained for it. Forget about how much money you could make or whether you could get ahead. Think only about whether or not you would enjoy performing that particular activity.

1. Making a speech L I D
2. Discuss your philosophy of life with someone L I D
3. Doing research work L I D
4. Catch up on your letter writing L I D
5. Repairing a clock L I D
6. Type a letter for a friend L I D
7. Operating machinery L I D
8. Solicit money for a community chest L I D
9. Writing reports L I D
10. Operate a bookkeeping machine L I D
11. Discussing politics L I D
12. Solve mechanical puzzels L I D
13. Taping a sprained ankle L I D
14. Watch an appendicitis operation L I D
15. Adjusting a carburetor L I D
16. String an aerial for a friend's radio L I D
17. Going to church L I D
18. Experiment with making candy without a recipe L I D
19. Heading a civic improvement program L I D
20. Sew on buttons L I D
21. Raising flowers and vegetables L I D
22. Take part in a public speaking contest L I D

23. Interviewing job applicants L I D

24. Work as a night watchman L I D

25. Teaching children L I D

26. Work in a textile (clothing) factory L I D

27. Teaching adults L I D

28. Study stenography (secretary) L I D

29. Meeting directing people L I D

30. Be a radio announcer L I D

31. Taking responsibility L I D

32. Be a electrician L I D

33. Sewing L I D

34. Work in a control room of a radio broadcasting studio L I D

35. Making statistical charts L I D

36. Work in a dental laboratory L I D

37. Operate office machines L I D

38. Make shipping bills L I D

39. Giving first aid assistance L I D

40. Operate a drill press L I D

41. Decorating a room with flowers L I D

42. Be a cook in a resturant L I D

43. Interviewing prospects in selling L I D

44. Take shorthand L I D

45. Drilling soldiers L I D

46. Send radio messages using code L I D

47. Pursuing bandits in a sheriff's posse L I D

48. Conduct research on the effects of drugs L I D

49. Watching an open-heart operation L I D

50. Write a novel L I D

51. Checking typewritten material for errors L I D

52. Refinish an old piece of furniture L I D

53. Repairing electrical wiring L I D

54. Set type for a small newspaper L I D

55. Organizing cabinets and closets L I D

56. Work on developing synthetic rubber L I D

57. Adjusting difficulties of others L I D

58. Inspect machines to see if they are in good condition L I D

59. Starting a conversation with a stranger L I D

60. Study architectural design L I D

61. Cabinetmaking L I D

62. Study calculus L I D

63. Being a forest ranger L I D

64. Conduct research on improving airplane design L I D

65. Bargaining ("swapping") L I D

66. Make drawings for a newspaper L I D

67. Looking at things in a clothing store L I D

68. Make small repairs around the home or garage L I D

69. Operate a precision lathe L I D

70. Buying merchandise for a store L I D

71. Overhaul an automobile engine L I D

72. Displaying merchandise in a store L I D

73. Add columns of figures L I D

74. Be an interpreter of a foreign language L I D

75. Competitive activities L I D

76. Be a welder L I D

77. Learn to use a slide rule L I D

78. File cards in alphabetical order L I D

79. Be a chemist L I D

80. Fill prescriptions in a drugstore L I D

81. Tune a piano L I D

82. Read gas meters L I D

83. Put tags and labels on merchandise L I D

84. Regular hours for work L I D

85. Study carpentry L I D

86. Study welding L I D

87. Operate a cash register L I D

88. Be an efficiency expert who improves shop procedure L I D

89. Make a chemical analysis of a new product L I D

90. Continually changing activities L I D

91. Rivet sheet metal L I D

92. Read radio blueprints L I D

93. Be a mechanical engineer L I D

94. Be an auto repairman L I D

95. Carve figures of wood L I D

96. Interviewing clients L I D

97. Be a surveyor L I D

98. Drive a taxi L I D

99. Operate a mimeograph duplicating machine L I D

100. Learn to play golf L I D

101. Take care of plants in gardens L I D

102. Teach English L I D

103. Teach Chemistry L I D

104. Arguments L I D

105. Developing business systems L I D

106. Doing your own laundry work L I D

107. Construct a cabinet according to a blueprint L I D

108. Patch a leaky roof L I D

109. Scramble eggs L I D

110. Drive a large truck L I D

111. Address envelopes L I D

112. Be a hospital attendant L I D

113. Raise poultry (chickens, ducks, etc) L I D

114. Work in a factory L I D

115. Saving money L I D

116. Contrubuting to charities L I D

117. Work at a desk L I D

118. Type letters from a dictation machine L I D

119. Do woodcarving L I D

120. Make furniture L I D

121. Talk with an expert on engine design L I D

122. Read about social customs in different countries L I D

123. Sell typewriters L I D

124. Raising money for charities L I D

125. Expressing judgments publicly, regardless of what others say L I D

126. Climbing along the edge of a steep cliff L I D

127. File reports and circulars L I D

128. Sort mail in a post office L I D

129. Keep records for a doctor's office L I D

130. Manage an office L I D

131. Arrange music for an orchestra L I D

132. Write an article for women on Repairing Household Appliances L I D

133. Do blood chemistry in a medical laboratory L I D

134. Write a popular article on how a diesel engine works L I D

135. Be a physical therapist L I D

136. Living in the city L I D

137. Discussing the purpose of life L I D

138. Run a gas station L I D

139. Be a sculptor L I D

140. Manage an apartment building L I D

141. Help people confused about income taxes L I D

142. Be a locomotive engineer L I D

143. Be an expert on color photography L I D

144. Be an athletic director L I D

145. Be a psychologist L I D

146. Manage a cafeteria L I D

147. Alphabetize cards L I D

148. Handle the advertising for a newspaper L I D

149. Be publicity director for a large company L I D

150. Be a jeweler L I D

HISTORICAL BACKGROUND

1. Birth Date Month _____ Day ___ Year _____

2. Place of Birth County _____ State _____ Country _____

3. Race _____ Sex _____

4. Occupation _____ Spouse's Occupation _____

5. Combined Family Income Circle One
   A. $0 - 10,000 C. $20,001 - 30,000
   B. $10,001 - 20,000 D. Over $30,000

6. Circle-Highest Grade attained in High School
   1 2 3 4 5 6 7 8 9 10 11 12

7. Are you a college graduate? circle Yes No
   If YES what was your major? _____

8. How many clubs were you in in High School and/or College? Circle
   A. 1 - 3 C. 7 - 9
   B. 4 - 6 D. More than 9

9. How many offices have you ever held in clubs, societies, church or school? Circle one 1 2 3 4 5 6 7 8 9 10 Over 10

10. Circle any sport participated in in School or College.
    A. Football C. Basketball E. Golf G. Hockey I. Bowling
    B. Baseball D. Track F. Soccer H. Tennis J. Volleyball
    Other _____

11. Do you own your home? Circle Yes No
    Circle approximate value.
    A. Less than $10,000 D. $40,001 - 60,000
    B. $10,001 - 20,000 E. $60,001 - 80,000
    C. $20,001 - 40,000 F. Over &80,000

12. Do you rent your home? Circle Yes No
    Circle amount of rent.
    A. Less than $100 C. $201 - 300
    B. $100 - 200 D. Over $300

13. How many employers have you had in the last 5 years? Circle one
    1 2 3 4 5 6 7 8 9 10 Over 10

14. How many children do you have ? _____

15. Are you a Church Member? Circle Yes No

HISTORICAL BACKGROUND

16. Fathers Occupation _____

17. Mothers Occupation _____

18. Fathers and Mothers Combined annual income. Circle one
    A. Less than $5,000 C. $15,001 - 20,000 E. $30,000 - 40,000
    B. $5,001 - 15,000 D. $20,001 - 30,000 F. Over $40,000

19. Highest grade in school attained by your father. Circle one
    1 2 3 4 5 6 7 8 9 10 11 12

20. Highest grade in school attained by your mother. Circle one
    1 2 3 4 5 6 7 8 9 10 11 12

21. Did your father graduate from college? Circle Yes No
    If YES what was his major? _____

22. Did your mother graduate from college? Circle Yes No
    If YES what was her major? _____

23. Do your parents own their home? Circle Yes No
    Approximate value? Circle one
    A. Less than $10,000 C. $20,001 - 30,000 E. $40,001 - 50,000
    B. $10,000 - 20,000 D. $30,001 - 40,000 F. Over $50,000
    Answer question according to when you were living with your parents.

24. Do or Did your parents rent their home? Circle one Yes No
    Amount of rent. Circle one
    A. Less than $100 C. $201 - 300
    B. $101 - 200 D. Over $300

25. How many children did your parents have? _____

26. Are or were your parents church members? Circle Yes No

Thank you for completing this questionaire. Your prompt response will be greatly appreciated.

THANK YOU AGAIN!!

Carl F. Martin

Carl F. Martin

APPENDIX F

DETERMINATION OF POPULATION SIZE

TABLE 7

SIZE OF SAMPLE BY COMPANIES

Industry	Number Employees	Per Cent Of Universe	Number In Sample
1. ITT Company	300	37.4	131
2. Braswell Company	50	6.3	22
3. Emerson Electric	356	45.0	157
4. Robbins Packing	85	11.3	39
Total	791	100.0	349

APPENDIX G

SUMMARIZATION OF DATA

TABLE 8

SUMMARIZATION OF DATA FROM QUESTIONAIRE

Activity	Socio-Economic and Educational Background		
	High	Low	Medium
1. Make a speech	39	-37	-06
2. Discuss philosophy of life	43	-29	-07
3. Do research work	35	-68	-10
4. Do letter writing	06	-52	15
5. Repair a clock	-20	-45	03
6. Type a letter	-63	-39	-20
7. Operate Machinery	-65	37	15
8. Solicit money for charity	63	-41	15
9. Write reports	-07	-42	26
10. Operate Office Machine	-74	-42	-19
11. Discuss politics	41	-15	07
12. Solve mechanical puzzles	13	-45	-24
13. Tape sprained ankle	-40	-61	-24
14. Watch appendicitis operation	22	-54	-24
15. Adjust carburetor	-48	10	-16
16. String aerial for radio	-02	-44	-19
17. Go to church	24	05	35
18. Make candy without recipe	-26	-61	-46
19. Head civic improvement program	35	-71	-02
20. Sew on buttons	-81	-53	-48
21. Raise flowers and vegetables	30	02	40
22. Be in public speaking contest	44	-53	-22
23. Interview job applicants	41	-44	-08
24. Work as night watchman	-93	-02	-45
25. Teach children	33	-19	02
26. Work in textiles	-28	27	11
27. Teach adults	37	-37	-01
28. Study stenography	-70	-61	-30
29. Meeting and directing people	43	-39	14
30. Be a radio announcer	54	25	41
31. Take responsibility	76	36	57
32. Be an electrician	65	-05	03
33. Sewing	-50	-46	-28
34. Work in control room of Broadcasting studio	11	-36	-22
35. Make statistical charts	37	-83	-33
36. Work in dental laboratory	0	-56	32
37. Operate office machines	-70	-34	-15
38. Make shipping bills	-74	-05	32
39. Give first aid	48	05	61
40. Operate drill press	-46	05	02
41. Decorate room with flowers	-39	-42	-24
42. Cook in a resturant	-94	-56	-46
43. Interview prospects in selling	48	-36	-03
44. Take shorthand	-67	-53	-28

TABLE 8--Continued

Activity	Socio-Economic and Educational Background		
	High	Low	Medium
45. Drill soldiers	-61	-03	16
46. Send radio messages using code	15	-59	-03
47. Pursue bandits	-61	-07	-23
48. Conduct research on effects of drugs	24	-66	-22
49. Watch open heart surgury	-15	-56	-07
50. Write a novel	46	-56	09
51. Check typewritten material for errors	-35	-29	-20
52. Refinish old furniture	15	08	22
53. Repair electrical wiring	-35	-59	-14
54. Set type for newspaper	-67	19	31
55. Organize cabinets	-59	-36	-28
56. Develope synthetic rubber	33	-69	-35
57. Adjusting difficulities of others	33	-51	03
58. Inspect machines	-65	29	46
59. Start conversation with stranger	19	-15	10
60. Study architecture	19	-69	-11
61. Cabinetmaking	-33	-15	05
62. Study calculus	15	-53	-30
63. Be a forest ranger	-61	-10	05
64. Do research on improving airplanes	35	-66	-17
65. Bargaining	02	-17	20
66. Draw for a newspaper	26	-44	03
67. Shop in clothing store	33	-12	19
68. Make repairs around home or garage	07	-07	10
69. Operate lathe	-83	-03	27
70. Buy merchandise for store	-15	-39	19
71. Overhaul automobile engine	-44	-19	-23
72. Display merchandise in a store	-37	20	31
73. Add columns of figures	-65	-32	17
74. Interprete foreign languages	15	-83	-28
75. Competitive activities	44	-20	33
76. Be a welder	-83	02	02
77. Use a slide rule	30	-80	-02
78. File in alphabetical order	-85	-15	-28
79. Be a chemist	20	-58	00
80. Fill prescriptions in a drugstore	-22	-19	43
81. Tune a piano	-09	-56	-24
82. Read gas meters	-89	17	35

TABLE 8--Continued

Activity	Socio-Economic and Educational Background		
	High	Low	Medium
83. Tag and label merchandise	-98	27	-08
84. Regular hours for work	65	47	59
85. Study carpentry	-63	46	11
86. Study welding	-76	02	-15
87. Operate cash register	-70	19	07
88. Efficiency expert	19	-76	-10
89. Do chemical analysis of a new product	33	-61	00
90. Continually changing activities	09	-37	-02
91. Rivet sheet metal	-92	-44	-46
92. Read radio blueprint	-11	-76	-20
93. A mechanical engineer	-15	-95	-66
94. An auto repairman	-87	-12	-23
95. Carve wood figures	-13	00	-20
96. Interview clients	50	-34	01
97. Be a surveyor	-54	-59	20
98. Drive a taxi	-96	-10	-30
99. Operate mimeograph machine	-96	-47	-31
100. Learn to play golf	05	-42	05
101. Take care of plants	05	19	34
102. Teach English	-07	-75	-45
103. Teach Chemistry	11	-85	-24
104. Arguments	-04	-29	06
105. Develope business systems	20	-64	-15
106. Do own laundry	-44	-33	-22
107. Construct a cabinet according to a blueprint	-27	-31	-22
108. Patch a leaky roof	-51	-17	-19
109. Scramble eggs	-35	-12	-15
110. Drive a large truck	-83	-10	-27
111. Address envelopes	-88	-44	-30
112. Be a hospital attendant	-94	-05	-01
113. Raise poultry	-61	25	23
114. Work in a factory	-17	59	37
115. Save money	31	15	47
116. Contribute to charities	33	15	33
117. Work at a desk	37	-34	22
118. Type from a dictating machine	-85	-67	-33
119. Do woodcarving	-19	-06	15
120. Make furniture	-46	-05	-20
121. Talk with an expert on engine design	39	-29	-27
122. Study social customs in other countries	33	-36	09
123. Sell typewriters	64	39	10

TABLE 8--Continued

Activity	Socio-Economic and Educational Background		
	High	Low	Medium
124. Raise money for charity	41	-25	19
125. Express opinions publicly regardless of what others say	28	05	12
126. Climb a steep cliff	-26	-58	-33
127. File reports and circulars	-96	-51	-38
128. Sort mail in post office	-85	29	26
129. Keep records for a doctor	-93	-63	-30
130. Manage an office	02	-34	05
131. Arrange music for an orchestra	-06	-75	-44
132. Write an article for women on repairing household appliances	-15	-75	-33
133. Do blood chemistry	17	-56	-11
134. Write an article on diesel engines	-31	-69	-25
135. Be a physical therapist	-31	-66	-01
136. Live in the city	02	12	23
137. Discuss the purpose of life	52	-37	10
138. Run a gas station	-69	25	18
139. Be a sculptor	-06	-73	-27
140. Manage an apartment	13	-37	28
141. Help people confused about income taxes	11	-54	00
142. Be a locomotive engineer	-91	-08	-27
143. Be an expert on color photography	-15	-56	-05
144. Be an athletic director	-22	-59	-43
145. Be a psychologist	11	-68	-21
146. Manage a cafeteria	00	-25	31
147. Alphabetize cards	-98	-61	-53
148. Handle the advertising for a newspaper	-15	-61	-11
149. Be a publicity director for a large company	11	-68	03
150. Be a jeweler	-48	-51	-02
Total Percent Score	-15	-30	-3.4

TABLE 9

SUMMARIZATION OF DATA FROM QUESTIONAIRE
BY RAW SCORE - TOTAL POPULATION

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
1. Make a speech	35	5	14	11	15	33	41	34	48
2. Discuss philosophy of life	34	9	11	9	14	36	48	21	57
3. Do research work	33	8	14	4	11	44	33	45	45
4. Do letter writing	19	19	16	9	10	40	61	19	43
5. Repair a clock	13	17	24	9	14	36	50	27	46
6. Type a letter	6	8	40	14	8	37	39	19	64
7. Operate Machinery	6	7	41	35	11	13	64	14	45
8. Solicit money for charity	39	10	5	12	11	36	57	28	38
9. Write reports	21	8	25	12	10	37	68	19	36
10. Operate office machines	3	8	43	14	6	39	45	10	68
11. Discuss politics	34	8	12	19	12	28	55	22	46
12. Solve mechanical puzzles	28	5	21	12	8	39	35	23	65
13. Tape sprained ankle	13	6	35	8	9	44	39	16	68
14. Watch appendicitis operation	28	10	16	8	11	40	34	26	63
15. Adjust carburetor	10	8	36	29	7	23	41	21	61
16. String aerial for radio	22	9	23	11	11	37	42	16	65
17. Go to church	26	15	13	25	12	22	67	32	24
18. Make candy without a recipe	18	4	32	8	7	44	29	8	86
19. Head civic improvement program	30	13	11	7	3	49	45	30	48
20. Sew on buttons	3	4	47	10	8	41	23	18	82
21. Raise flowers and vegetables	29	12	13	26	14	19	77	18	28
22. Be in public speaking contest	35	8	11	8	12	39	36	24	63
23. Interview job applicants	32	12	10	12	9	38	45	23	55
24. Work as night watchman	0	4	50	18	11	30	25	18	80
25. Teach children	31	10	13	11	16	22	50	25	48
26. Work in textiles	15	9	30	33	9	17	58	21	44

TABLE 9--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
27. Teach adults	35	4	15	11	15	33	50	22	51
28. Study stenography	5	6	43	10	3	46	37	12	74
29. Meeting and directing people	32	13	9	12	12	35	58	24	41
30. Be a radio announcer	39	5	10	34	6	19	82	9	32
31. Take responsibility	46	3	5	36	8	15	90	13	20
32. Be an electrician	6	7	41	22	12	25	54	19	50
33. Sewing	8	11	35	13	6	40	37	14	72
34. Work in control room of Broadcasting studio	25	10	19	11	16	32	59	32	32
35. Make statistical charts	30	14	10	4	2	53	31	20	72
36. Work in dental laboratory	23	8	23	11	4	44	64	34	25
37. Operate office machines	8	10	46	13	13	33	45	15	63
38. Make shipping bills	3	8	43	24	8	27	68	26	29
39. Give first aid	34	12	8	25	12	22	89	18	14
40. Operate drill press	2	5	27	29	4	26	49	17	47
41. Decorate room with flowers	13	8	34	9	8	34	38	18	67
42. Cook in a resturant	0	3	51	9	8	42	25	16	82
43. Interview prospects in selling	35	10	9	14	10	35	49	21	53
44. Take shorthand	6	6	42	11	6	42	40	8	75
45. Drill soldiers	8	5	41	24	9	26	59	25	39
46. Send radio messages using code	27	15	12	6	12	41	44	31	48
47. Pursue bandits	5	11	38	23	9	27	38	19	66
48. Conduct research on effects of drugs	29	9	16	5	10	44	29	38	56
49. Watch open heart surgery	24	17	16	7	12	40	42	31	50
50. Write a novel	36	9	11	7	12	40	51	22	40
51. Check typewritten material for errors	11	13	30	14	14	31	32	24	57
52. Refinish old furniture	17	12	25	25	14	20	61	28	34
53. Repair electrical wiring	13	10	32	8	8	43	44	18	61
54. Set type for newspaper	5	8	41	28	14	17	65	31	27

TABLE 9--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
55. Organize cabinets	7	8	39	16	6	37	37	14	72
56. Develope synthetic rubber	30	12	12	4	10	45	29	22	72
57. Adjusting difficulities of others	29	14	11	8	13	38	43	40	39
58. Inspect machines	5	9	40	32	12	15	73	33	17
59. Start conversation with stranger	27	9	17	17	16	26	51	33	39
60. Study architecture	24	16	14	5	8	46	37	36	50
61. Cabinetmaking	11	14	29	19	12	28	50	29	44
62. Study calculus	25	12	17	3	0	56	33	20	70
63. Be a forest ranger	7	7	40	21	11	27	53	23	47
64. Do research on improving airplane	33	7	14	6	8	45	34	34	55
65. Bargaining	20	15	19	20	9	30	58	31	34
66. Draw for a newspaper	29	10	15	10	13	36	53	21	49
67. Shop in clothing store	28	16	10	17	18	24	59	28	36
68. Make repairs around home or garage	22	14	18	20	14	24	57	21	45
69. Operate lathe	3	3	48	23	11	25	49	14	16
70. Buy merchandise for store	15	16	23	10	16	33	60	26	37
71. Overhaul automobile engine	8	14	32	19	10	30	41	13	69
72. Display merchandise in a store	12	10	32	28	15	16	69	23	31
73. Add columns of figures	6	7	41	12	16	31	62	20	41
74. Interprete foreign languages	21	10	23	2	6	51	32	14	67
75. Competitive activities	31	16	7	14	19	26	71	24	30
76. Be a welder	3	3	48	23	14	22	54	17	52
77. Use a slide rule	28	14	12	3	6	50	42	36	45
78. File in alphabetical order	2	4	48	16	8	25	38	12	73
79. Be a chemist	27	11	16	6	13	40	40	33	40
80. Fill prescriptions in a drugstore	16	10	28	19	10	30	80	17	26
81. Tune a piano	20	9	25	9	8	42	36	21	66
82. Read gas meters	1	4	49	27	15	17	70	25	27
83. Tag and label merchandise	0	1	53	32	71	16	48	17	58

TABLE 9--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
84. Regular hours for work	40	9	5	38	11	10	86	24	13
85. Study carpentry	7	6	41	38	10	11	59	18	96
86. Study welding	4	5	45	23	16	22	39	26	58
87. Operate cash register	6	4	44	27	16	16	57	18	48
88. Efficiency expert	28	8	18	5	4	50	45	21	57
89. Do chemical analysis of a new product	33	6	15	8	7	44	46	31	46
90. Continually changing activities	26	7	21	11	15	33	47	27	49
91. Rivet sheet metal	1	2	51	13	8	39	24	18	81
92. Read radio blueprint	17	14	23	5	4	50	39	20	64
93. A mechanical engineer	19	8	27	0	3	56	18	6	99
94. An auto repairman	0	7	47	20	12	27	43	9	71
95. Carve wood figures	15	17	22	21	17	21	56	36	31
96. Interview clients	37	8	10	14	11	34	52	20	51
97. Be a surveyor	10	5	39	9	6	44	43	12	68
98. Drive a taxi	0	2	52	23	7	29	33	20	70
99. Operate a mimeograph machine	0	2	52	12	7	40	37	11	75
100. learn to play golf	19	19	16	11	12	36	52	25	46
101. Take care of plants	20	17	17	27	16	16	67	31	25
102. Teach English	20	10	24	5	5	49	26	14	23
103. Teach Chemistry	22	16	16	2	5	52	38	18	67
104. Arguments	15	22	17	14	14	31	51	28	44
105. Develop Business systems	23	19	12	5	11	43	44	17	62
106. Do own laundry	10	10	34	16	7	36	39	18	66
107. Construct a cabinet according to a blueprint	11	17	26	17	7	35	39	18	66
108. Patch a leaky roof	11	4	39	23	4	33	45	10	68
109. Scramble eggs	14	7	33	23	6	30	44	16	63
110. Drive a large truck	2	5	47	20	13	26	37	16	70
111. Address envelopes	2	2	50	12	9	38	39	8	76

TABLE 9--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
112. Be a hospital attendant	1	1	52	23	10	26	47	27	49
113. Raise poultry	9	3	42	32	10	17	61	39	33
114. Work in a factory	15	15	24	43	7	8	72	25	26
115. Save money	28	15	11	31	6	22	85	11	27
116. Contribute to charities	34	4	16	26	16	17	71	21	31
117. Work at a desk	33	8	13	14	11	34	71	18	44
118. Type from a dictating machine	3	2	49	3	13	43	35	12	76
119. Do woodcarving	16	12	26	20	16	23	56	30	37
120. Make furniture	9	9	36	21	14	24	36	27	60
121. Talk with an expert on engine design	12	9	33	17	8	34	34	22	67
122. Study social customs in other countries	29	14	11	14	10	35	55	23	45
123. Sell typewriters	8	3	43	14	8	37	60	15	48
124. Raise money for charity	34	8	12	16	12	31	62	22	39
125. Express opinions publicly regardless of what others say	30	9	15	23	9	20	59	20	44
126. Climb a steep cliff	16	8	30	7	11	41	31	20	72
127. File reports and circulars	0	2	52	12	5	42	31	34	78
128. Sort mail in a post office	3	2	49	30	16	13	68	19	36
129. Keep records for a doctor	1	2	51	7	8	44	40	6	77
130. Manage an office	23	9	22	13	13	33	57	15	51
131. Arrange music for an orchestra	18	15	21	2	11	46	28	13	82
132. Write an article for women on repairing household appliances	17	12	25	3	9	47	32	19	72
133. Do blood chemistry	25	13	16	6	14	39	42	26	55
134. Write an article on diesel engines	13	11	30	2	14	43	24	34	55
135. Be a physical therapist	14	9	31	6	8	45	51	19	53
136. Live in the city	22	11	21	27	12	20	66	19	38
137. Discuss the purpose of life	37	8	9	12	13	34	50	35	38
138. Run a gas station	4	9	41	27	20	12	58	29	36

TABLE 9--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
139. Be a sculptor	21	11	24	5	6	48	32	26	65
140. Manage an apartment building	23	15	16	11	15	33	72	14	37
141. Help people confused about income taxes	22	16	16	7	13	39	50	23	50
142. Be a locomotive engineer	2	1	51	21	12	26	31	28	64
143. Be an expert on color photography	19	8	27	6	14	39	50	29	44
144. Be an athletic director	12	18	24	8	8	43	30	20	73
145. Be a psychologist	24	12	18	5	9	45	41	15	67
146. Manage a cafeteria	19	26	19	15	14	30	68	25	30
147. Alphabetize cards	0	1	53	10	3	46	25	7	91
148. Handle the advertising for a newspaper	22	18	14	6	11	42	44	22	57
149. Be a publicity director for a large company	25	10	19	6	7	46	51	25	47
150. Be a jeweler	11	6	37	5	19	35	43	35	45
Total Raw Score	-1225			-2657			-627		

TABLE 10

SUMMARIZATION OF DATA FROM QUESTIONAIRE
BY RAW SCORE - FEMALE

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
1. Make a speech	15	3	6	6	7	8	18	19	13
2. Discuss philosophy of life	18	4	2	3	3	15	20	10	20
3. Do research work	11	5	8	2	6	13	10	24	16
4. Do letter writing	7	9	8	4	4	13	32	6	12
5. Repair a clock	1	6	17	1	2	18	2	12	36
6. Type a letter	4	5	15	12	3	6	30	11	9
7. Operate Machinery	0	2	22	9	6	6	13	8	29
8. Solicit money for charity	18	4	2	2	3	16	26	10	14
9. Write reports	9	6	9	3	4	14	28	7	15
10. Operate office machines	3	6	15	11	5	5	36	3	11
11. Discuss politics	12	6	6	2	5	14	13	12	25
12. Solve mechanical puzzles	4	2	18	0	2	19	7	3	40
13. Tape a sprained ankle	7	4	13	5	5	11	28	7	15
14. Watch an appendicitis operation	13	5	6	3	3	15	15	10	25
15. Adjust a carburetor	2	1	21	1	4	16	3	6	41
16. String an aerial for radio	4	3	17	0	2	19	3	5	42
17. Go to church	13	5	6	10	3	8	36	6	8
18. Make candy without a recipe	17	2	5	8	4	9	25	5	20
19. Head civic improvement program	14	5	5	3	2	16	19	10	21
20. Sew on buttons	3	2	19	10	5	6	21	12	17
21. Raise flowers and vegetables	15	4	5	11	8	2	35	8	7
22. Be in public speaking contest	12	5	7	2	5	14	16	14	20
23. Interview job applicants	14	5	5	5	6	10	19	8	23
24. Work as nigth watchman	0	2	22	2	1	18	3	5	42
25. Teach children	16	4	4	6	6	9	29	9	12
26. Work in textiles	7	6	11	12	4	5	26	9	15

TABLE 10--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
27. Teach adults	14	2	8	4	3	14	23	12	15
28. Study stenography	5	5	14	10	3	8	34	10	6
29. Meeting and directing people	13	7	4	4	6	11	17	12	21
30. Be a radio announcer	12	5	7	6	4	11	21	6	23
31. Take responsibility	19	3	2	8	6	7	29	10	11
32. Be an electrician	0	2	22	3	2	16	5	4	41
33. Sewing	7	9	8	12	5	4	30	11	9
34. Work in control room of a Broadcasting studio	12	5	7	2	6	13	20	13	17
35. Make statistical charts	11	8	5	1	2	18	12	10	28
36. Work in dental laboratory	8	6	10	9	2	10	28	13	9
37. Operate office machines	6	7	11	12	5	4	30	5	15
38. Make shipping bills	3	5	16	9	3	9	29	11	10
39. Give first aid	18	2	4	10	5	6	39	5	4
40. Operate drill press	0	2	22	3	2	16	9	6	35
41. Decorate room with flowers	11	6	7	9	6	6	32	13	5
42. Cook in a resturant	0	2	22	6	4	11	13	8	29
43. Interview prospects in selling	15	6	3	6	5	10	20	9	21
44. Take shorthand	5	6	13	9	3	9	31	5	14
45. Drill soldiers	3	2	19	1	5	15	11	12	27
46. Send radio messages in code	8	9	7	2	2	17	15	16	19
47. Pursue bandits	2	3	19	1	3	17	6	9	35
48. Conduct research on effects of drugs	12	4	8	2	7	12	9	20	21
49. Watch open heart surgery	6	8	10	2	5	14	20	15	15
50. Write a novel	19	3	2	3	6	12	22	10	18
51. Check typewritten material for errors	7	7	10	9	6	6	23	12	15
52. Refinish old furniture	8	6	10	5	8	8	14	19	17
53. Repair electrical wiring	1	1	22	0	2	19	3	4	43

TABLE 10--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
54. Set type for newspaper	3	5	16	9	5	7	28	10	12
55. Organize cabinets	7	6	11	13	5	3	31	9	10
56. Develope synthetic rubber	11	6	7	3	1	17	13	13	24
57. Adjusting difficulties	16	5	3	5	9	7	21	23	5
58. Inspect machines	3	6	15	11	5	5	26	18	6
59. Start conversation with a stranger	9	7	8	6	10	5	15	12	23
60. Study architecture	10	9	5	3	8	10	12	20	18
61. Cabinetmaking	2	6	16	3	3	15	11	7	32
62. Study calculus	9	8	7	1	0	20	3	5	42
63. Be a forest ranger	1	2	21	2	5	14	6	10	34
64. Do research on improving airplane	13	4	7	1	6	14	8	11	31
65. Bargaining	8	9	7	5	6	10	15	16	19
66. Draw for a newspaper	13	7	4	7	5	9	21	13	16
67. Shop in clothing store	17	6	1	13	5	3	40	2	8
68. Make repairs around home or garage	6	9	9	3	6	12	6	11	33
69. Operate lathe	0	1	23	2	5	14	6	5	39
70. Buy merchandise for store	6	10	8	3	7	11	21	15	14
71. Overhaul automobile engine	0	2	22	1	1	19	2	1	47
72. Display merchandise in a store	9	6	9	12	5	4	26	8	16
73. Add columns of figures	4	6	14	8	6	7	31	10	9
74. Interprete foreign languages	13	6	5	2	5	14	20	13	17
75. Competitive activities	16	5	3	5	7	9	28	15	7
76. Be a welder	0	2	22	2	4	15	5	6	39
77. Use a slide rule	10	9	5	1	5	15	19	20	11
78. File in alphabetical order	2	3	19	12	6	3	31	10	9
79. Be a chemist	11	6	7	3	2	16	16	12	22
80. Fill prescriptions in a drugstore	8	7	9	10	3	8	28	10	12
81. Tune a piano	13	5	6	7	6	8	21	13	16

TABLE 10--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
82. Read gas meters	1	2	21	9	5	7	29	12	9
83. Tag and label merchandise	0	1	23	11	3	7	26	8	16
84. Regular hours for work	22	2	0	19	1	1	48	2	0
85. Study carpentry	1	2	21	8	6	7	13	6	31
86. Study welding	2	2	20	4	6	11	7	6	37
87. Operate cash register	6	3	15	16	1	4	31	4	15
88. Do chemical analysis of a new product	14	3	7	2	4	15	20	10	20
89. Efficiency expert	12	3	9	1	2	18	14	9	27
90. Continually changing activities	11	3	10	6	5	10	16	13	21
91. Rivet sheet metal	0	1	23	2	2	17	4	2	44
92. Read radio blueprint	6	5	13	1	3	17	9	12	29
93. A mechanical engineer	4	1	19	0	1	20	3	2	45
94. An auto repairman	0	3	21	1	2	18	3	3	44
95. Carve wood figures	6	3	15	10	4	7	26	15	9
96. Interview clients	16	3	5	4	5	12	21	7	22
97. Be a surveyor	2	1	21	3	1	17	9	3	38
98. Drive a taxi	0	0	24	3	2	16	5	4	41
99. Operate mimeograph machine	0	2	22	7	4	10	31	7	12
100. Learn to play golf	9	6	9	2	2	17	11	13	26
101. Take care of plants	12	7	5	12	6	3	31	10	9
102. Teach English	13	6	5	2	5	14	11	12	27
103. Teach Chemistry	10	8	6	0	2	19	17	13	20
104. Arguments	7	12	5	3	5	13	20	18	12
105. Develope business systems	7	11	6	1	5	15	12	9	29
106. Do own laundry	8	7	9	11	5	5	26	12	12
107. Construct a cabinet according to a blueprint	2	3	19	1	3	17	8	6	36
108. Patch a leaky roof	0	2	22	1	1	19	3	2	45

TABLE 10--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
109. Scramble eggs	0	4	12	15	4	2	25	8	17
110. Drive a large truck	0	1	23	3	3	15	6	5	39
111. Address envelopes	2	2	20	12	5	4	36	6	8
112. Be a hospital attendant	0	1	23	11	6	4	26	14	10
113. Raise poultry	4	2	18	9	5	7	22	17	11
114. Work in a factory	7	11	6	12	5	4	26	14	10
115. Save money	12	6	6	10	4	7	32	6	12
116. Contribute to charities	11	2	11	9	5	7	30	2	18
117. Work at a desk	17	3	4	6	7	8	39	3	8
118. Work typing from a dictating machine	3	1	20	3	5	13	31	5	14
119. Do woodcarving	5	6	13	8	5	8	20	16	14
120. Make furniture	3	5	16	2	2	17	8	7	35
121. Talk with an expert on engine design	4	3	17	1	1	19	3	2	45
122. Study social customs in other countries	13	6	5	3	2	16	20	8	22
123. Sell typewriters	4	1	19	1	3	17	15	7	28
124. Raise money for charity	19	3	2	4	3	14	30	10	10
125. Express opinions publicly regardless of what others say	11	5	8	6	5	11	19	12	19
126. Climb a steep cliff	6	3	15	2	1	18	5	6	39
127. File reports and circulars	0	2	22	12	4	5	31	11	8
128. Sort mail in post office	2	1	21	11	6	4	30	9	11
129. Keep records for a doctor	1	2	21	7	3	11	36	4	10
130. Manage an office	8	4	12	5	3	13	16	5	29
131. Arrange music for an orchestra	10	10	4	2	6	13	10	8	32
132. Write an article for women on repairing household appliances	6	3	15	1	1	19	7	10	33
133. Do blood chemistry	12	5	7	1	3	17	13	11	26
134. Write an article on diesel engines	1	3	20	0	2	19	3	8	39
135. Be a physical therapist	10	7	7	6	3	12	36	9	5

TABLE 10--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
136. Live in the city	10	3	11	12	4	5	26	9	15
137. Discuss the purpose of life	18	2	4	3	2	16	20	14	16
138. Run a gas station	2	5	17	8	9	4	20	16	14
139. Be a sculptor	10	6	8	2	2	17	10	8	32
140. Manage an apartment	14	5	5	6	6	9	31	9	10
141. Help people confused about income taxes	9	8	7	2	3	16	18	13	19
142. Be a locomotive engineer	0	1	23	3	2	16	6	4	40
143. Be an expert on color photography	4	6	14	1	3	17	12	10	28
144. Be an athletic director	3	3	18	0	2	19	8	6	36
145. Be a psychologist	8	6	10	1	3	17	11	10	29
146. Manage a cafeteria	14	6	4	7	3	11	26	12	12
147. Alphabetize cards	0	1	23	8	2	11	21	7	22
148. Handle the advertising for a newspaper	11	9	4	1	3	17	13	12	25
149. Be a publicity director for a large company	10	6	8	3	2	16	11	16	23
150. Be a jeweler	6	6	12	3	4	14	15	13	22

TABLE 11

SUMMARIZATION OF DATA FROM QUESTIONAIRE
BY RAW SCORE - MALE

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
1. Make a speech	20	2	8	5	8	25	23	15	35
2. Discuss philosophy of life	16	5	9	6	11	21	28	11	37
3. Do researh work	21	3	6	2	5	31	23	21	29
4. Do letter writing	12	10	8	5	6	27	29	13	31
5. Repair a clock	12	11	7	8	12	18	48	15	10
6. Type a letter	2	3	25	2	5	31	9	8	56
7. Operate machinery	6	5	19	26	5	7	51	6	16
8. Solicit money for charity	21	6	3	10	8	20	31	18	24
9. Write reports	12	2	16	9	6	23	40	12	21
10. Operate office machines	0	2	28	3	1	34	9	7	57
11. Discuss politics	22	2	6	17	7	14	42	10	21
12. Solve mechanical puzzles	24	3	3	12	6	20	28	20	25
13. Tape a sprained ankle	6	2	22	3	4	31	11	9	53
14. Watch an appendicitis operation	15	5	10	5	8	25	19	16	38
15. Adjust carburetor	8	7	15	28	3	7	38	15	20
16. String aerial for radio	18	6	6	11	9	18	39	11	23
17. Go to church	13	10	7	15	9	14	31	26	16
18. Make candy without a recipe	1	2	27	0	3	35	4	3	66
19. Head civic improvement program	16	8	6	4	1	33	26	20	27
20. Sew on buttons	0	2	28	0	3	35	2	6	65
21. Raise flowers and vegetables	14	8	8	15	6	17	42	10	21
22. Be in public speaking contest	23	3	4	6	7	25	20	10	43
23. Interview job applicants	18	7	5	7	3	28	26	15	32
24. Work as night watchman	0	2	28	16	10	12	22	13	38
25. Teach children	15	6	9	5	10	13	21	16	36
26. Work in textiles	8	3	19	21	5	12	32	12	29

TABLE 11--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
27. Teach adults	21	2	7	7	12	19	27	10	36
28. Study stenography	0	1	29	0	0	38	3	2	68
29. Meeting and directing people	19	6	5	8	6	24	41	12	20
30. Be a radio announcer	9	6	15	12	10	16	52	10	11
31. Take responsibility	27	0	3	28	2	8	61	3	9
32. Be an electrician	6	5	19	19	10	9	49	15	9
33. Sewing	1	2	27	1	1	36	7	3	63
34. Work in control room of broadcasting studio	13	5	12	9	10	19	39	19	15
35. Make statistical charts	19	6	5	3	0	35	19	10	44
36. Work in dental laboratory	15	2	13	2	2	34	36	21	16
37. Operate office machines	2	3	35	1	8	29	15	10	48
38. Make shipping bills	0	3	27	15	5	18	39	15	19
39. Give first aid	16	10	4	15	7	16	50	13	10
40. Operate drill press	2	3	25	26	2	10	40	11	12
41. Decorate room with flowers	2	2	27	0	2	28	6	5	62
42. Cook in a resturant	0	1	29	3	4	31	12	8	53
43. Interview prospects in selling	20	4	6	8	5	25	29	12	32
44. Take shorthand	1	0	29	2	3	33	9	3	61
45. Drill soldiers	5	3	22	23	4	11	48	13	12
46. Send radio messages using code	19	6	5	4	10	24	29	15	29
47. Pursue bandits	3	8	19	22	6	10	32	10	31
48. Conduct research on effects of drugs	17	5	8	3	3	32	20	18	35
49. Watch open heart surgery	15	9	6	5	7	26	22	16	35
50. Write a novel	17	6	7	4	6	28	29	12	32
51. Check typewritten material for errors	4	6	20	5	8	25	9	12	42
52. Refinish old furniture	9	6	15	20	6	12	47	9	17
53. Repair electrical wiring	11	9	10	8	6	24	41	14	18

TABLE 11--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
82. Read gas meters	0	2	28	18	10	10	41	13	18
83. Tag and label merchandise	0	0	30	21	8	9	22	9	42
84. Regular hours for work	18	7	5	19	10	9	38	22	13
85. Study carpentry	6	4	20	30	4	4	46	12	15
86. Study welding	2	3	25	19	10	11	32	20	21
87. Operate cash register	0	1	29	11	15	12	26	14	33
88. Efficiency expert	16	5	9	4	2	32	31	12	30
89. Do chemical analysis of a new product	19	3	8	6	3	29	26	21	26
90. Continually changing activities	15	4	11	5	10	23	31	14	28
91. Rivet sheet metal	1	1	28	11	6	21	20	16	37
92. Read radio blueprint	11	9	10	4	1	33	30	8	35
93. A mechanical engineer	15	7	8	0	2	36	15	4	54
94. An auto repairman	0	4	26	19	10	9	40	6	27
95. Carve wood figures	9	14	7	11	13	14	30	21	22
96. Interview clients	21	5	5	10	6	22	31	13	29
97. Be a surveyor	8	4	18	6	5	27	34	9	30
98. Drive a taxi	0	2	28	20	5	13	28	16	29
99. Operate a mimeograph machine	0	0	30	5	3	30	6	4	63
100. Learn to play golf	10	13	7	9	10	19	41	12	20
101. Take care of plants	8	10	12	15	10	13	36	21	16
102. Teach English	7	4	19	3	0	35	15	2	56
103. Teach Chemistry	12	8	10	2	3	33	21	5	47
104. Arguments	8	10	12	11	9	18	31	10	32
105. Develope business systems	16	8	6	4	6	28	22	8	43
106. Do own laundry	2	3	25	5	2	31	13	6	54
107. Construct a cabinet according to a blueprint	9	14	7	16	4	18	31	12	30
108. Patch a leaky roof	11	2	17	21	3	14	42	8	23

TABLE 11--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
54. Set type for newspaper	2	3	25	19	9	10	37	21	15
55. Organize cabinets	0	2	28	3	1	34	6	5	62
56. Develope synthetic rubber	19	6	5	1	9	28	16	9	48
57. Adjusting difficulties of others	13	9	8	3	4	31	22	17	34
58. Inspect machines	2	3	25	21	7	10	47	15	11
59. Start conversation with stranger	19	2	9	11	6	21	36	21	16
60. Study architecture	14	7	9	2	0	36	25	16	32
61. Cabinetmaking	9	8	13	16	9	13	39	22	12
62. Study calculus	16	4	10	2	0	36	30	15	28
63. Be a forest ranger	6	5	19	19	6	13	47	13	13
64. Do research on improving airplane	20	3	7	5	2	31	26	23	24
65. Bargaining	12	6	12	15	3	20	43	15	15
66. Draw for a newspaper	16	3	11	3	8	27	32	8	33
67. Shop in clothing store	11	10	9	4	13	21	19	26	28
68. Make repairs aroun home or garage	16	5	9	17	8	12	51	10	12
69. Operate lathe	3	2	25	21	6	11	43	9	21
70. Buy merchandise for store	9	6	15	7	9	22	39	11	23
71. Overhaul automobile engine	8	12	10	18	9	11	39	12	22
72. Display merchandise in a store	3	4	23	16	10	12	43	15	15
73, Add columns of figures	2	1	27	4	10	24	31	10	32
74. Interprete foreign languages	8	4	18	0	1	37	12	1	50
75. Competitive activities	15	11	4	9	12	17	43	9	21
76. Be a welder	3	1	26	21	10	7	49	11	13
77. Use a slide rule	18	5	7	2	1	35	23	16	34
78. File in alphabetical order	0	1	29	4	2	22	7	2	64
79. Be a chemist	16	5	9	3	11	24	24	31	18
80. Fill prescriptions in a drugstore	8	3	19	9	7	22	52	7	14
81. Tune a piano	7	4	19	2	2	34	15	8	50

TABLE 11--Continued

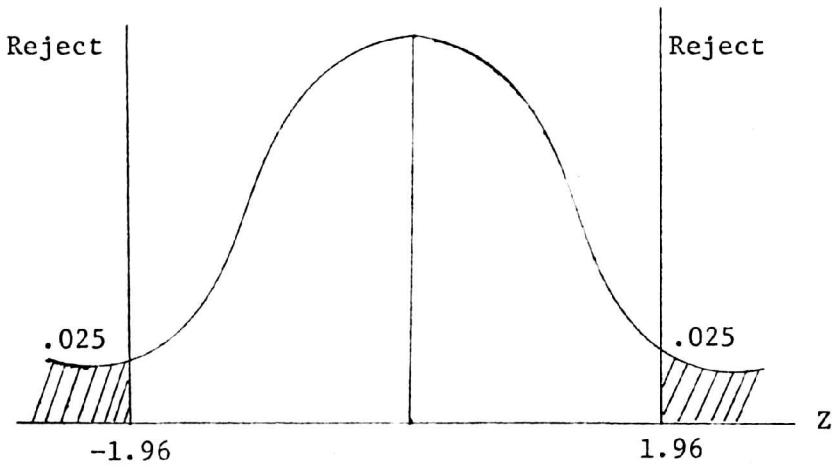
Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
109. Scramble eggs	6	3	21	8	2	28	19	8	46
110. Drive a large truck	2	4	24	17	10	11	31	11	31
111. Address envelopes	0	0	30	0	4	34	3	2	68
112. Be a hospital attendant	1	0	29	12	4	22	21	13	39
113. Raise poultry	5	1	24	23	5	10	39	22	12
114. Work in a factory	8	4	18	31	2	4	46	11	16
115. Save money	16	9	5	21	2	15	53	5	15
116. Contribute to charities	23	2	5	17	11	10	41	19	13
117. Work at a desk	16	5	9	8	4	26	32	15	36
118. Type from a dictating machine	0	1	29	0	8	30	4	7	62
119. Do woodcarving	11	6	13	12	11	15	36	14	23
120. Make furniture	6	4	20	19	12	7	28	20	25
121. Talk with an expert on engine design	8	6	16	16	7	15	31	20	22
122. Study social customs in other countries	16	8	6	11	8	19	35	15	23
123. Sell typewriters	4	2	24	13	5	20	45	8	20
124. Raise money for charity	15	5	10	12	9	17	32	12	29
125. Express opinions publicly regardless of others say	19	4	7	17	4	17	40	8	25
126. Climb a steep cliff	10	5	15	5	10	23	26	14	33
127. File reports and circulars	0	0	30	0	1	37	0	3	70
128. Sort mail in a post office	1	1	28	19	10	9	38	10	25
129. Keep records for a doctor	0	0	30	0	5	33	4	2	67
130. Manage an office	15	5	10	8	10	20	41	10	22
131. Arrange music for an orchestra	8	5	17	0	5	33	18	5	50
132. Write an article for women on repairing household appliances	11	9	10	2	8	28	25	9	39
133. Do blood chemistry	13	8	9	5	11	22	29	15	29
134. Write an article on diesel engines	12	8	10	2	12	24	21	26	26
135. Be a physical therapist	4	2	24	0	5	33	15	10	48

TABLE 11--Continued

Activity	Socio-Economic and Educational Background								
	High			Low			Medium		
	L	I	D	L	I	D	L	I	D
136. Live in the city	12	8	10	15	8	15	40	10	23
137. Discuss the purpose of life	19	6	5	9	11	18	30	21	22
138. Run a gas station	2	4	24	19	11	8	38	13	22
139. Be a sculptor	11	5	15	3	4	31	22	18	33
140. Manage an apartment	9	10	11	5	9	24	41	5	27
141. Help people confused about income taxes	13	8	9	5	10	23	32	10	31
142. Be a locomotive engineeer	2	0	28	18	10	10	25	24	24
143. Be an expert on color photography	15	2	13	5	11	22	38	19	16
144. Be an athletic director	9	15	6	8	6	24	22	14	37
145. Be a psychologist	16	6	8	4	6	28	30	5	38
146. Manage a cafeteria	5	10	15	8	11	19	42	13	18
147. Alphabetize cards	0	0	30	2	1	35	4	0	69
148. Handle the advertising for a newspaper	11	9	10	5	8	25	31	10	32
149. Be a publicity director for a large company	15	4	11	3	5	30	40	9	24
150. Be a jewler	5	0	25	2	15	21	28	22	23

APPENDIX H

THE NORMAL CURVE



NORMAL CURVE

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