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(6) RELATIONSHIP OF TERMINAL AND INSTRUMENTAL HUMAN VALUES TO GROWTH NEED STRENGTH AND JOB MOTIVATION,

(10) Charles C. Pringle, Captain, USAF

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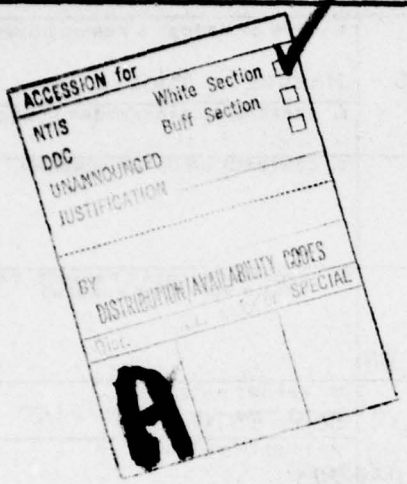
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The purpose of this thesis was to determine if a positive and significant relationship existed between an individual's Terminal and Instrumental Human Values and his Growth Need Strength and if a positive and significant relationship existed between an individual's Terminal and Instrumental Human Values and his Job Motivation. Human values were considered to be the standards of humans; therefore, values should directly influence an individual's needs, behavior, and performance. Consequently, an accurate measurement of an individual's value hierarchies should provide good predicators of his needs, behavior, and performance. The Rokeach Value Survey was used to measure the human values hierarchies, and the Job Diagnostic Survey was used to measure Growth Need Strength and the Job Motivation Potential Score. The Kendall Coefficient of Concordance tested the strength and statistical significance of the relationship between respondents' value hierarchies and their Growth Need Strength. The Spearman Rank Correlation Coefficient tested the correlation and statistical significance between the value hierarchies for various Growth Need Strengths. The findings indicated Growth Need Strength seven respondents favored self-esteem and self-actualization need values, and Growth Need Strength six, five, and four respondents favored safety, belongingness, and self-esteem need values. No relationship existed between value hierarchies and job motivation.

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RELATIONSHIP OF TERMINAL AND INSTRUMENTAL HUMAN VALUES TO GROWTH NEED STRENGTH AND JOB MOTIVATION

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Facilities Management

By

Charles C. Pringle, BS
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September 1978

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This thesis, written by

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has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degree of

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Any mistakes in this thesis are solely the responsibility of the author, and the conclusions in this thesis are also the sole responsibility of the author.

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CHAPTER I

INTRODUCTION

Massey[1] has stated that there are a number of different value systems in any organization because of the values ingrained into people during the time period in which they are socialized by their family, friends, church or religion, school, and the information media, particularly radio and television (16). Massey illustrated that a time period of approximately ten years was a sufficient socialization period to produce a significant change in value priorities for that "generation" which was being socialized. The first ten years of an individual's life were purported to be the most critical years in establishing his value priorities because his value system would evolve from his training. Massey supported his ten-year value system differential assertion by identifying some of the important values of the generations raised in the five ten-year periods between 1920 to 1970. For example, people who were raised in the 1920s were taught that patriotism, family closeness, and hard work were important. People raised in the 1930s were affected by the Great Depression and

---

[1]Dr. Morris E. Massey is Associate Dean, Director of Undergraduate Studies, University of Colorado.

financial security. People raised in the 1940s were affected by World War II and increased mobility. On the other hand, people raised in the 1950s and 1960s were affected by permissiveness and affluence, and they were better educated and informed than people who were raised in previous decades. In summary, Massey stated that organizations have four or more ten-year "generation" gaps of employees and managers in each organization (16). Consequently, perceived or realized differences in value systems between employees or between managers, or between employees and managers, have created conditions in which respect and confidence were reduced or disappeared; honest, open communications suffered; and grounds for conflict emerged (2:18). The preceding conditions or conflicts have usually existed in the past on a small scale, because the value system differences in the years before 1950 were not significantly in conflict with one another (16).

Since 1971, business management has discerned a new, emerging societal value system which is in conflict with the older, traditional values of business (2:16). A chief executive of General Motors has stated that he is disturbed about society's lost concern for its institutions: governments, press, churches, military, and business (12:63). George Cabot Lodge has identified the change in contemporary societies' values as follows: (1) a transition from the traditional values of individualism to

individual fulfillment through participation in an organic social process; (2) a transition from property rights to rights of membership; (3) a transition from competition to a community need to satisfy consumer desires as a means of controlling the uses of property; (4) a transition from the limited state to an expanded role for government; and (5) a transition from scientific specialization and fragmentation to a perception of whole systems, not just their parts (12:63-67). In addition, Miner has stated that it appears as if there will be a serious shortage of managerial talent in the mid-1980s if the following values continue to decline in the younger generation: favorable attitude toward authority; desire to exercise power; desire for distinctive position; and a sense of responsibility (18:147).

The emergence of the new societal value system which does not favor the older, traditional values of the business world has set the stage for value system conflicts between organizations and their employees (2:17). Brown has inferred from articles published between 1973 and 1975 that the motivation malaise (i.e., job indifference) that has affected employees and managers since 1971 may be attributed to the new societal value system (2:15).

Business management realizes that a firm's productivity is directly related to technology and job performance. Business management also realizes that its

employee's job performance is affected by the employee's feeling of job satisfaction and by the employee's job motivation (26:756). Research findings by E. F. Stone and numerous other researchers have concluded that there is a positive relationship between the degree a job is "enriched" and the degree of satisfaction of an employee with his job (25:164; 27:393). In short, Stone's findings supported the previous conclusions that the greater the degree a job is enriched, the more satisfied are its incumbents (25:160). Therefore, behavioral scientists' efforts are continually being expended in further developing the "Job Enrichment" (JE) theory and its implementation to increase employees' satisfaction with their jobs. To insure consistency in this research, *job enrichment* is defined as,

> Redesign of the content of jobs specifically involving improvements in the clarity and completeness of tasks, increased decision-making opportunities and improved feedback--through the work [29:49].

Unfortunately, past research efforts have paid little attention to the interaction between employees' values and the organizational processes (3:550). Although past research has uncovered a great deal of information concerning how socialization takes place in complex organizations, little is understood about the ways in which values affect, are affected by, and interact with the multitude of organizational properties, processes, and managerial actions (3:555).

Connor and Becker have asserted that the merit of value research is twofold. First, values may be more parsimonious predictors of organizational phenomena (e.g., employees' performance) than the study of such variables as attitudes, perceptions, and personality traits, which are currently being used frequently without much thought about their relationship to the underlying value systems (4:88-94). Secondly, values may explain some critical missing variance concerning the nature of relationships in organizational environments. It is not expected that values will explain the total variance in other variables (3:558). Rather, it has been contended that the inclusion of employees' values as a distinct variable in an analysis of organizational interactions will help to more fully explain the organizational relationships (3:559). Consequently, the business world might profitably focus its attention on research concerning the interaction of value systems on interpersonal relations and work performance in the organizational environment (2:22; 3:550).

Statement of the Problem

A need exists to determine if a relationship exists between employees' and managers' human value systems and their job motivation.

Background

Business Philosophy

The philosophy behind the American business system has been to develop know-how for each problem encountered. Consistent with this philosophy, business has treated management as a technological problem. Human relations have become textbook material, and the administration of business has preached morality and generally neglected human resource development and human values. Consequently, many jobs today do not provide for the psychological growth, self-actualization, and gainful skill employment of their incumbents (10:53,54).

Today's typical young business employee has received a better education than his predecessors and is continually being bombarded with new information concerning all aspects of life via the print and electronic media (16). Therefore, the "enlightened" employees of today are not motivated by the traditional ideologies and values or slogans of business organizations. Instead, employees have realized that human relations have merely been manipulated by business (10:53). The emergence of the new societal value system which is espoused by the younger employees has indicated that the employees' psychological growth, self-actualization, and gainful skill employment have become important needs to them; and these needs are not being satisfied through their work (21:37). Work is

considered a means to an end by today's typical young Americans; therefore, they have endeavored to enrich their lives outside of the work environment by overloading their leisure, sexual, educational, and other interpersonal relationships (10:54).

Because the business world is concerned about the present job motivation indifference of its personnel, it has turned to behavioral scientists and psychologists for assistance and advice to redress the motivation problem (29:52). Behavioral scientists and psychologists have suggested that the crux of the problem may have been the negligence of business management to incorporate areas of ethics and values into their business philosophy, since an individual's ethics and values are reflected in his behavior (2:15). Subsequently, large business concerns are now emphasizing Human Resource Development (HRD) on an unprecedented scale. Executive level management positions are being created specifically to concentrate on HRD. Representatives from various large companies are meeting frequently to advance HRD in business (17:2-7). One approach to HRD which has gained wide acceptance among managers throughout the country is Herzberg's theory of orthodox job enrichment (21:299).

Job Enrichment Theory

Herzberg has contended that his two-factor theory of satisfaction and motivation is the most promising of

all organizational strategies to resolve the existing job motivation indifference problem in business (10:54). A series of generally successful job enrichment experiments based on the principles derived from Herzberg's theory were performed by the American Telephone and Telegraph system during 1965 and 1968 (7:96,97). Unfortunately, the Herzberg JE model does not provide a measurement tool that diagnoses existing jobs and employee job motivation.

An alternative job enrichment strategy, which is built on and complements previous work on job enrichment, was undertaken by Hackman and Oldham. The Hackman and Oldham strategy provides a set of tools for diagnosing existing jobs and provides a map for translating the diagnostic results into specific action steps for change (9:57). The Hackman and Oldham model for job enrichment is built around three "psychological states" that have been defined by behavioral scientists as being critical in determining a person's motivation and satisfaction on the job. Hackman and Oldham define these three psychological states as follows:

> 1. Experienced meaningfulness--the individual must perceive his work as worthwhile or important by some system of values he accepted.
> 2. Experienced responsibility--he must believe that he personally is accountable for the outcome of his efforts.
> 3. Knowledge of results--he must be able to determine, on some fairly regular basis, whether or not the outcome of his work is satisfactory [8:6].

Further research has identified five "core" characteristics of jobs that elicit the three critical psychological states:

1. Skill Variety--the degree to which a job requires the worker to perform activities that challenge his skills and abilities.
2. Task Identity--the degree to which the job requires completion of a "whole" and identifiable piece of work--doing a job from beginning to end with a whole visible outcome.
3. Task Significance--the degree to which the job has a substantial and perceivable impact on the lives of other people, whether in the immediate organization or the world at large.
4. Autonomy--the degree to which the job gives the worker freedom, independence, and discretion in scheduling work and determining how he will carry it out.
5. Feedback--the degree to which a worker, in carrying out the work activities required by the job, gets information about the effectiveness of his efforts [8:5].

Figure 1 depicts the relationship among the core job characteristics, critical psychological states, and on-the-job outcomes. If the first three core job characteristics are present to a high degree, the worker is quite likely to view his job as being very meaningful. Likewise, autonomy and feedback are positively related to experienced responsibility and knowledge of results respectively (9:2).

The first step in job enrichment implementation is to measure the five core characteristics of jobs. The instrument which was developed by Hackman and Oldham to measure the core characteristics is the Job Diagnostic Survey (JDS) (8:6). After the core characteristics are measured, a Motivating Potential Score (MPS) of a job is computed using the following formula:

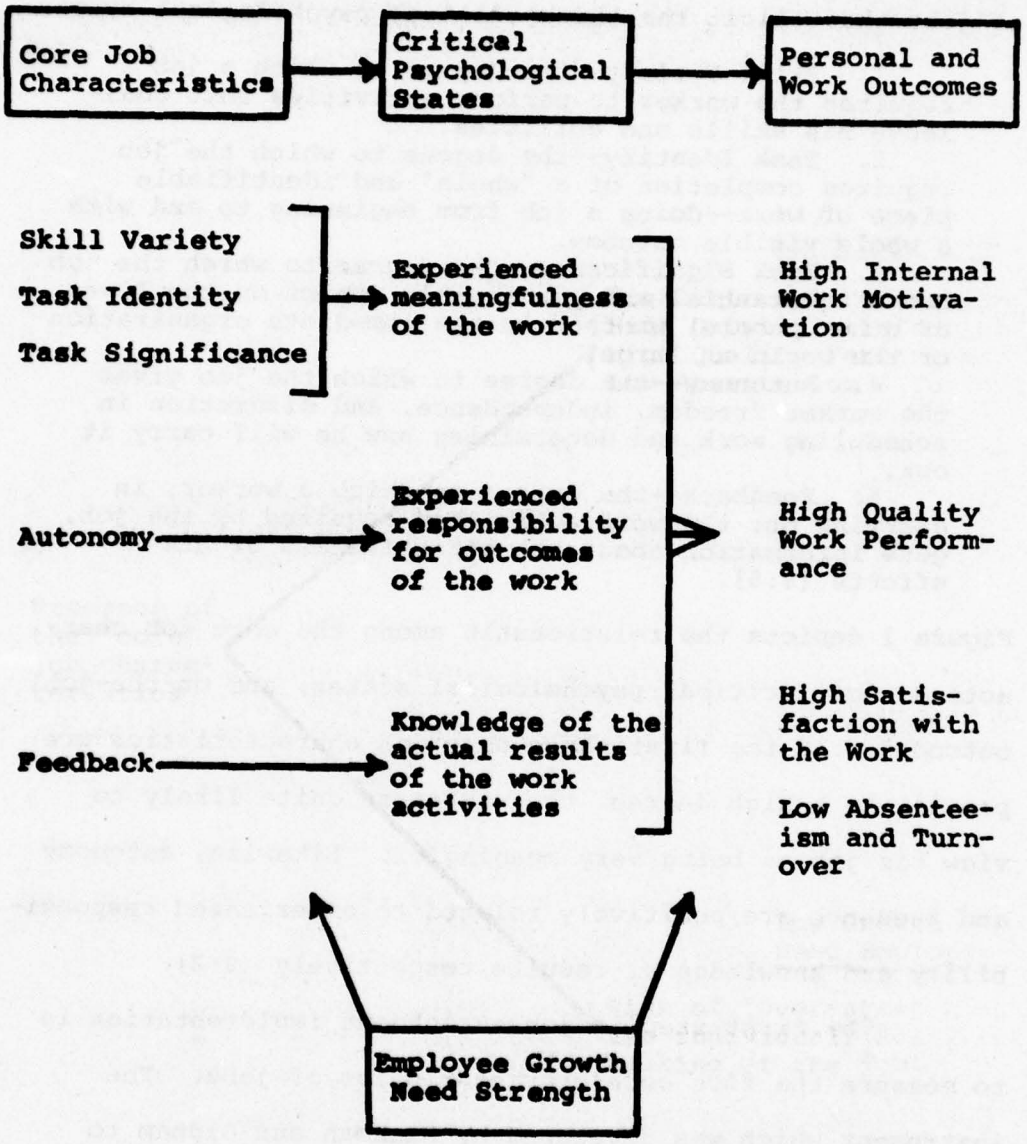


Figure 1. Relationship Among Core Job Characteristics, Critical Psychological States and On-the-Job Outcomes (8:3)

$$MPS = \frac{\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}}{3} \times \text{Autonomy} \times \text{Feedback} \quad (8:4)$$

A MPS is a single summary index of the degree to which the objective characteristics of a job will prompt high internal work motivation (9:59).

Hackman and Oldham have stated that job enrichment does not apply with equal effectiveness to all individuals. Although E. F. Stone's later findings indicate that job enrichment may apply with equal effectiveness to most individuals (24:164), it has been demonstrated that individuals who have a strong need for personal growth and development will respond very positively to a job with a high motivating potential score (20:393). This strong need (or strength) for personal growth and development has been identified as an individual's desire for the higher-order needs as depicted in Maslow's hierarchy of needs (i.e., self-esteem and self-actualization) and has been defined as growth need strength (GNS) (8:4; 21; 43:306). Growth need strength serves as a moderator in the relationships specified in the Hackman and Oldham job enrichment theory. Figure 2, together with Figure 1, illustrates the moderating effect of growth need strength (9:60). Oldham, Hackman, and Pearce have shown that high GNS, satisfied employees, and a high MPS produce strong and positive outcome relationships. On the other hand, a low GNS, satisfied employees, and a high MPS produce moderate

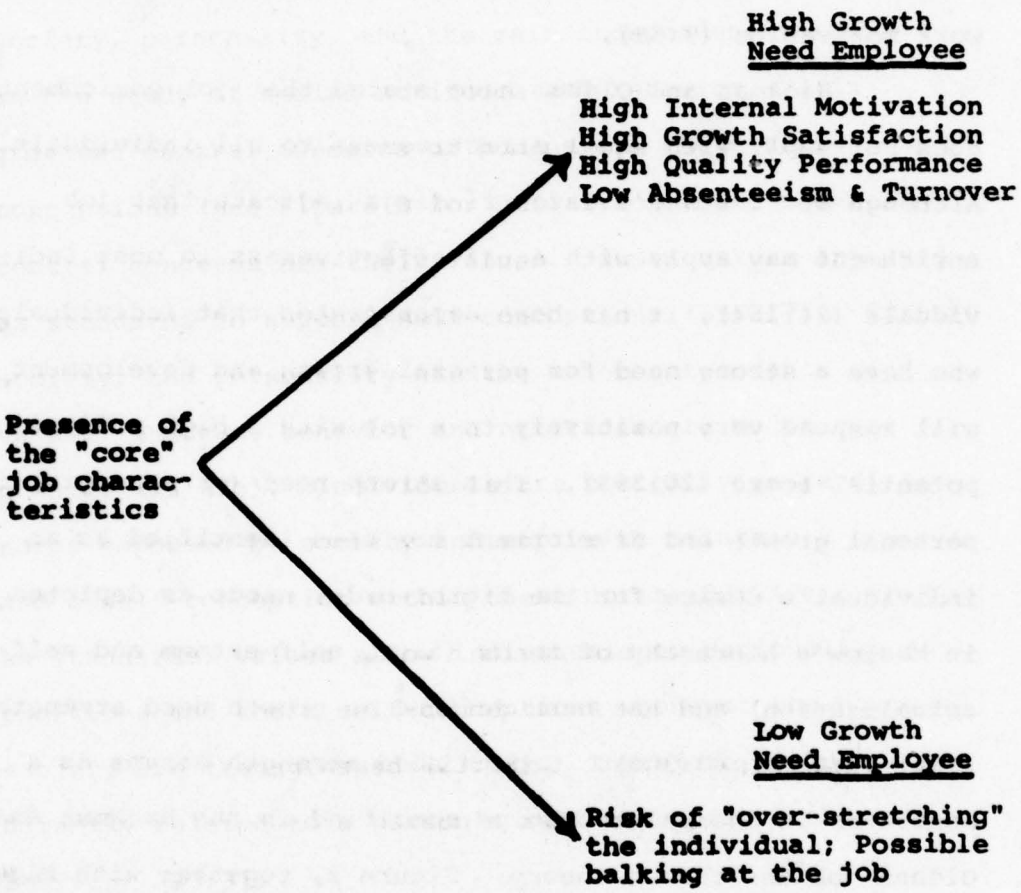


Figure 2. The Moderating Effect of Employee Growth-Need Strength (9:60)

outcome relationships; and a low GNS, dissatisfied employees, and a low MPS produce near zero outcome relationships. Therefore, GNS has proven to be an important ingredient in determining the success or failure of job enrichment (20:396,402).

Oldham, Hackman, and Pearce's findings further suggested that prior to enriching jobs, practitioners should carefully assess both individual differences in needs and organizational environment sources of dissatisfaction such as pay, security, co-workers, and supervisors. Otherwise, an absence of high GNS or the presence of organizational sources of dissatisfaction or a combination of the two will probably stifle successful job enrichment implementation (20:402). Hackman and Oldham's strategy for job enrichment and the above findings have indicated that successful job enrichment has been contingent upon an individual's GNS and his job satisfaction.

Since the business world has apparently ignored the possibility that values may explain some critical missing variance in the successful employment of job enrichment theory to increase both job motivation and job satisfaction, it seems appropriate to investigate if relationships exist among human value systems, GNS, and job motivation. This research was conducted to determine if such relationships do, in fact, exist, and, if so, to determine the nature and strength of the relationships.

Concept of Values

Rokeach[2] has contended that human values are the core concept across all the social sciences. Values are the main dependent variables in the study of culture, society, personality, and the main independent variables in the study of social attitudes and behavior (23:ix). The greatest central concerns of humans are their self-conceptions (see Figure 3 for definition), and the next central concerns are their values. Human values are used as standards to support self-conceptions (23:217). Culture, society, and personality are the major antecedents of values; whereas, behavior and attitudes are major consequences (23:326). Individuals are basically aware of the norms espoused by society and strive to maintain a position and a self-conception within these norms (23:217). Serving as standards, values allow individuals to rationalize their positions and their self-conceptions whenever the norms of society are transgressed (23:13). Therefore, values are directly related to a person's self-conceptions and behavior (23:3).

Values, in contrast to the other terms defined in Figure 3, have been a neglected ingredient in past studies of job motivation. Values support our awareness about the desirable and delineate the distinction between right and

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[2]Dr. Milton Rokeach is Professor of Sociology and Psychology, Washington State University.

Attitude--a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner (22:112).

Behavior--action/s resulting from motivation ranging from a single act (voting) to a whole set of acts (pursuit of a certain occupation) (2:16).

Belief--an inference made by an observer about underlying states of expectancy (22:2).

Ethics--the study of right and wrong, usually including the determining and encouraging of what is right (2:16).

Growth Need Strength--a need for personal accomplishment, learning, growth, and development beyond one's present status (20:50). Growth need strength is measured as interval scale data, and it was measured by the job attitude survey (see Appendix A) which is based upon the Job Diagnostic Survey.

Ideology--an organization of beliefs and attitudes--religious, political, or philosophical in nature--that is more or less institutionalized or shared with others, deriving from external authority (22:123-124).

Internal Work Motivation--the degree to which a person is self-motivated to perform effectively on a job (8:6).

Opinion--a verbal expression of some belief, attitude, or value, insufficient to produce certainty (2:16).

Philosophy--the study or science of the truths or principles underlying all knowledge and beings (or reality) (similar to the total value system) (2:16).

Self-actualization--a person's desire and need to be all that he can be within his physical, mental, and spiritual limitations (15:80-92).

Self-conceptions--include all one's cognitions, conscious and unconscious, about one's physical image; intellectual and moral abilities and weaknesses; socio-economic position in society; national, regional,

Figure 3. Glossary of Terms

ethnic, racial and religious identity; the sexual, generational, occupational, marital, and parental roles that one plays in society; and how well or poorly one plays such roles [23:215].

Value--a belief upon which a person acts by preference (1:454); an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence (23:5).

Value System--an enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance (23:5).

Figure 3--Continued

wrong (2:16). Rokeach suggested that a child initially learns a value in isolation from other values in an absolute, all-or-none manner. Therefore, the isolation and absolute learning of values guarantees a period of endurance and stability. As a child grows and matures, he encounters conflicts that involve two or more values. Through experience and a process of maturation, the child gradually integrates the isolated, absolute values into a hierarchically organized value system in which each value has been ordered in priority of importance relative to other values (23:6). Values are also affective in that a person can feel emotional about them, and values have a behavioral aspect in that they can lead to action when activated (23:7). The chief roles of values are to maintain and enhance self-esteem and to generate attitudes which express values, assist in judgment, defend the ego, and exhibit knowledge functions or self-actualization functions (23:12-15). In short, values have more to do with modes of conduct and end-states of existence than any other human attribute (14:23-24).

In the past, various psychologists have concentrated on changing a person's self-conceptions, personality, attitudes, or behavior in order to resolve conflicts created by an imbalance in a person's belief system. This was a cognitive (intellectual) approach to educate the person about his undesirable behavior or knowledge in order

to lead to the resolution of his conflict (23:17-19). Rokeach has stated that the cognitive approach has not been very successful because the function of values as the link between one's self-conceptions and his attitudes and behavior has been ignored. On the other hand. Rokeach has contended that the more a contradiction in self-conceptions exists in a person's belief system, the more it will be experienced as a state of self-dissatisfaction. A state of self-dissatisfaction in one's self-conceptions, not the cognitive approach, would be the basic motivation for permanent and lasting cognitive and behavioral changes which should also produce an associated permanent change in a person's attitudes and behavior (23:225,226). Since self-conceptions are the central concern of a person, they are less likely to change than values, attitudes, behavior, and personalities (23:217,230). In summary, values are the second central concern of a person; have cognitive, affective, and behavioral dimensions; serve as standards to enhance and maintain self-conceptions; are more enduring and stable than attitudes and behavior; and are the determinants of attitudes and behavior. A change in values is more likely to occur than a change in self-conceptions (23:231-232). Therefore, values should be an essential part of any motivational and behavioral research involving humans (14:23-24).

Rokeach has developed a value survey which measures a person's value priorities. This value survey instrument (see Appendix B) was developed as a result of twenty-five years of study and research on values by Rokeach. The value survey is composed of 18 terminal (end-state) and 18 instrumental (mode of conduct) values (2:20). The 18 terminal values were developed from a review of the literature, Rokeach's own values, and values of 30 psychology graduate students, the values of 100 adults in metropolitan Lansing, Michigan, and other sources. The 18 instrumental values were derived from a list of 18,000 trait names originally compiled by Allport and Odbert (2:20). The number of instrumental values was reduced on the basis of synonyms, words denoting temporary states, physical characteristics, negative values, sexual association, and unfamiliar words (2:20). The survey consists of ordering the 18 terminal values and the 18 instrumental values in a priority sequence for each of the two different types of values according to their degree of importance to the respondent. The values are on gummed labels so that they can be moved around easily. The value survey seems to be the best instrument available today to measure values directly and easily, and it could be employed to measure values as an aid in helping to solve personal conflict problems, to match managers and employees, and to reveal possible future actions for motivating people (2:22). The survey reveals which values the

respondents believe are central determinants of their behavior. The determination of individuals' true priorities of values has led to significant behavior changes and a reorientation to more self-actualization for a number of people (23:29).

Many of Rokeach's findings concerning human values are consistent with Maslow's hierarchial theory of human motivation (23:327). Maslow's hierarchy of human needs consisted of the following five basic categories beginning with the lower order needs and proceeding to the higher order needs:

(1) Physiological needs which are directed toward maintaining the body at some normal state of existence;

(2) Safety needs which are directed toward maintaining an orderly, predictable, organized world;

(3) Belongingness and love needs which satisfy man's apparent inability to withstand social isolation;

(4) Esteem needs which are directed toward man's requirement to feel adequate, useful, and necessary to the world; and

(5) Self-Actualization needs which are dedicated to allowing a man to reach his full potential in life (15:80-92).

Since Maslow has contended that men will generally not seek the satisfaction of higher order needs until each preceding

lower need has been reasonably satisfied, a person's value hierarchy should identify his current basic needs, or motivational status (15:80-92; 23:16,17).

Because values appear to be an essential part of an individual's motivational and behavioral makeup, they should relate directly to his growth need strength (GNS) and his perception of job motivation. Therefore, an investigation to determine if a relationship exists among value systems, GNS, and job motivation appears to be warranted.

Research Objectives

The specific objectives of this research are to:

1. Determine if a relationship exists between growth need strength and terminal human values.

2. Determine if a relationship exists between growth need strength and instrumental human values.

3. Determine if a relationship exists between the motivating potential score of a job and terminal human values.

4. Determine if a relationship exists between the motivating potential score of a job and instrumental human values.

Research Hypotheses

1. There is a positive relationship between growth need strength and terminal human values.

2. There is a positive relationship between growth need strength and instrumental human values.

3. There is a positive relationship between the motivating potential score of a job and terminal human values.

4. There is a positive relationship between the motivating potential score of a job and instrumental human values.

Research Questions

If a positive relationship exists between growth need strength and a hierarchy of terminal and instrumental human values, the research question to be addressed is what hierarchy of terminal and instrumental values has a positive relationship with GNS.

If a positive relationship exists between a motivating potential score of a job and a hierarchy of terminal and instrumental values, the research question to be addressed is what hierarchy of terminal and instrumental values has a positive relationship to MPS.

Assumptions

Important assumptions upon which this research is based are:

1. The Job Diagnostic Survey instrument and the Rokeach Value Survey instruments are both reliable, valid,

and consistent measuring tools of the parameters which they measure (8; 16).

2. Specific assumptions concerning values are:

a. Everyone possesses values to different degrees.

b. Values are organized in hierarchical value systems.

c. Antecedents of human values can be traced to culture, society, institutions, and personality.

d. Consequences of values are manifested in all social science phenomena worth investigation and understanding (23:3).

Scope and Limitations

Both the JDS and the Rokeach Value Survey were administered to 200 employees of the 2750th Air Base Wing Civil Engineering Squadron at Wright-Patterson Air Force Base, Ohio. Although it would have been beneficial to conduct value research throughout the military services to provide an insight into the behavior of all Department of Defense employees (28:151; 13:5), this research was necessarily restricted because of time, funding, and manpower constraints. The 2750th Air Base Wing Civil Engineering Squadron, however, appears similar in nearly every respect to other Air Force civil engineering organizations within the continental United States. Therefore, the assumption that replication of this research with these organizations would produce similar results appears reasonable.

CHAPTER II

METHODOLOGY

This chapter presents the methodology for the research effort. Operational definitions are presented, the survey instruments are identified, the sample population is delineated, the research design is outlined, the statistical analysis is specified, and the criteria test for the research hypotheses is discussed.

Operational Definitions

The following definitions are presented to insure a consistency concerning the following parameters as pertains to this research and its findings:

1. Growth Need Strength (GNS) is a need (or strength) for personal growth, learning, accomplishment, and development beyond one's present status (20:50; 8:6,73). Growth need strength is measured as interval scale data, and it was measured by the job attitude survey (see Appendix A) which is based upon the Job Diagnostic Survey. Although the range for GNS is from four to ten on the JDS, the respondents' scores were converted by the JDS scoring into a range of one to seven (8:73), in which a seven is a high GNS and a one is a low GNS. For the purposes

of this research, the GNS assigned to a surveyed respondent was determined as follows:

If a respondent's score was from		GNS equals
7.00 to 6.50	=	7
6.49 to 5.50	=	6
5.49 to 4.50	=	5
4.49 to 3.50	=	4
3.49 to 2.50	=	3
2.49 to 1.50	=	2
1.49 to 0.00	=	1

2. Motivating Potential Score (MPS) is a single summary index of the degree to which the objective characteristics of a job will prompt high internal work motivation (9:59). The range of the MPS is from 1-343 with an "average" score being 125 (9:61). The MPS is measured as interval scale data, and it, also, was measured by the job attitude survey. For the purposes of this research, the respondents' MPS Scores were grouped as follows:

If a respondent's score was from		Job's motivating potential is
0 - 124	=	1, Low
125 - 250	=	2, Medium
251 - 343	=	3, High

3. A terminal human value is an end-state (i.e., personal or social) value, and an instrumental human value is a mode of conduct (i.e., moral or competence) value (23:7). The specific terminal and instrumental values used in this research are identified and specifically defined in the Rokeach Value Survey (see Appendix B), and they were measured as ordinal scale data by the Rokeach Value Survey.

Instruments

The job attitude survey which was used in this research is based in part upon the Job Diagnostic Survey (JDS). The JDS is a measuring instrument designed to measure the following three classes of variables:

1. The objective characteristics of jobs, particularly the degree to which jobs are designed so that they enhance the internal work motivation and the job satisfaction of the employees.

2. The personal affective reactions of individuals to their jobs and to the broader work setting.

3. The readiness of individuals to respond positively to "enriched jobs"--i.e., jobs which have an average MPS score of 125 or higher (8:1).

The JDS is founded on a specific theory of how jobs affect employee motivation. It is intended for two general purposes: (1) for diagnosing existing jobs to determine if and how a job might be redesigned to improve employee productivity and satisfaction; and (2) for evaluating the effect of job changes, including deliberate job enrichment projects or naturally-occurring changes of technology or work systems, on employees (8:1). The JDS scales used in this research provide measures of the five core job characteristics, the three critical psychological states, feedback from others, dealing with others, general satisfaction, specific satisfactions in five areas; i.e., pay, job

security, social satisfaction, supervision, and personal growth need strength (8:56). The JDS does not measure actual work productivity or employee perceptions of their productivity (8:6). The JDS is not recommended for use in diagnosing jobs for single individuals or for selection or placement purposes (8:36,37).

The JDS has undergone three major revisions from 1972 to 1974, when it was taken by over 1500 individuals working on more than 100 different jobs in 15 different organizations. Revisions were based on both psychometric and substantive considerations. The revisions were to maximize scale reliabilities and the empirical discrimination among scales. In addition, the revisions were used to assess the conceptual validity of the theory on which the instrument was based. The changes to the instrument were smaller with each modification, and the final version was not significantly different from the one immediately preceding it (8:8). The internal consistency reliabilities of the JDS range from a high of .88 for growth need strength to a low of .56 for social satisfaction. Means and standard deviations of the JDS scale score were tested for 658 respondents, and the results indicated that the different number of respondents who held various jobs did not substantially affect the scale scores (8:20). In general, the variables measured by the JDS showed the relationships to each other as predicted by the theory upon

which the instrument was based (8:17-27), and the JDS showed it had satisfactory psychometric characteristics (8:27). The measurement scale level for the JDS is interval.

The Rokeach Value Survey was administered to a sample of 189 college students twice with an interval of three weeks between the surveys. The test-retest reliabilities were .75 for terminal values and .65 for the instrumental values (23:33). The measurement level scale for the value survey is ordinal. Rokeach has stated that terminal values are probably learned earlier in life than instrumental values; therefore, they become stabilized sooner (23:33). Terminal values reliabilities are found to be consistently higher than those of instrumental values (23:33).

Because of the ordinal nature of the Rokeach Value Survey, a realistic limitation could arise from the ipsative nature of the rank-order procedure of the survey. Ipsativity occurs when value scores for an individual are dependent on his own scores relative to other values; consequently, the value scores would not be strictly comparable with other scores of other individuals (2:16). Nonetheless, Rokeach has conducted several tests which have indicated that the 36 values are negligibly correlated with one another despite the ipsative nature of the survey (23:41). Further, research has also shown that there is no order effect built into the value survey (23:42).

The possibility that respondents ordered their values according to a perceived social norm or social desire was also considered, but later testing revealed a low correlation between the rankings in the Rokeach Value Survey and the ranking of the 36 values according to a socially desirable order of importance (23:42).

The validity and reliability of the Rokeach Value Survey is further supported from its use by the National Opinion Research Center, which administered a survey in 1968 to a sample of Americans over twenty-one. This national survey provided the first descriptive data derived by a systematic approach to measure the values of a cross-section of adult Americans (23:55-56). A second similar national survey was conducted in 1971 (23:324).

Population and Sample

The universe for this research consisted of the GNS and the terminal and instrumental human values of the managers and employees who work in USAF civil engineering organizations located within the continental borders of the the United States. Included also in the universe are the MPS of the jobs of these personnel. The population for this research consisted of the GNS and terminal and instrumental human values of the managers and employees of the 2750th Civil Engineering Squadron (CES) at Wright-Patterson Air Force Base (WPAFB), Ohio, as well as the MPS of the

jobs of these personnel. The 2750th CES had a total of 1310 personnel employed in its organization as of the end of May, 1977. The survey respondents for this research consisted of 200 members of the above population. The surveys were forwarded to the selected recipients in the population in June, 1977; and the majority of the surveys were returned to the author by the middle of June.

The universe as discussed above was limited to USAF civil engineering organizations in the United States, because past value research findings using the Rokeach Value Survey on international college students indicated a number of differences in their value order ranking relative to American college students (23:89-93). Therefore, the universe for this research excluded possible foreign nationals' value hierarchies which would probably be included in similar research involving an overseas USAF CES.

The 2750th CES organization was selected for this thesis research for the following reasons: (1) it has a large variety of disciplines, skills, and trades; (2) it has a wide cross-section of different management levels as well as a rank and file contingent; (3) it was convenient for the researcher; and (4) the population approximated a "standard" Air Force CES with respect to its function as prescribed by Air Force Regulation 85-5, Operations and Maintenance of Real Property.

The population was comprised of 11 officers, 192 enlisted personnel, and 1106 civilians. The mission of the 2750th CES is basically the same as that of any other USAF CES: to maintain all the Real Property Facilities on a USAF installation. Real Property Facilities include but are not limited to the following: all buildings; roads; land; airfield; sanitation, power, and heating facilities; permanently installed equipment such as air conditioning and power generating equipment; and the military family housing facilities. The CES is also responsible for any new construction or repair to existing Real Property Facilities as well as any construction of new Real Property Facilities on a USAF installation (6:1-4). The standard CES (see Figure 4) is basically divided into four major branches: Programming, Engineering and Construction, Fire Protection, and Operations and Maintenance. Each branch is further divided into appropriate sections. The skills employed by the CES extend across the large spectrum of the construction industry (e.g., civil, electrical, mechanical, structural, sanitation, and industrial engineers; architects; accountants; business administration managers; firemen; carpenters; masons; electricians; machinists; plumbers; and pavement specialists) (6:1-4B). The military rank composition of the 2750th CES personnel was from colonel to an airman just out of technical school. The civilian grade composition was comparable to the military

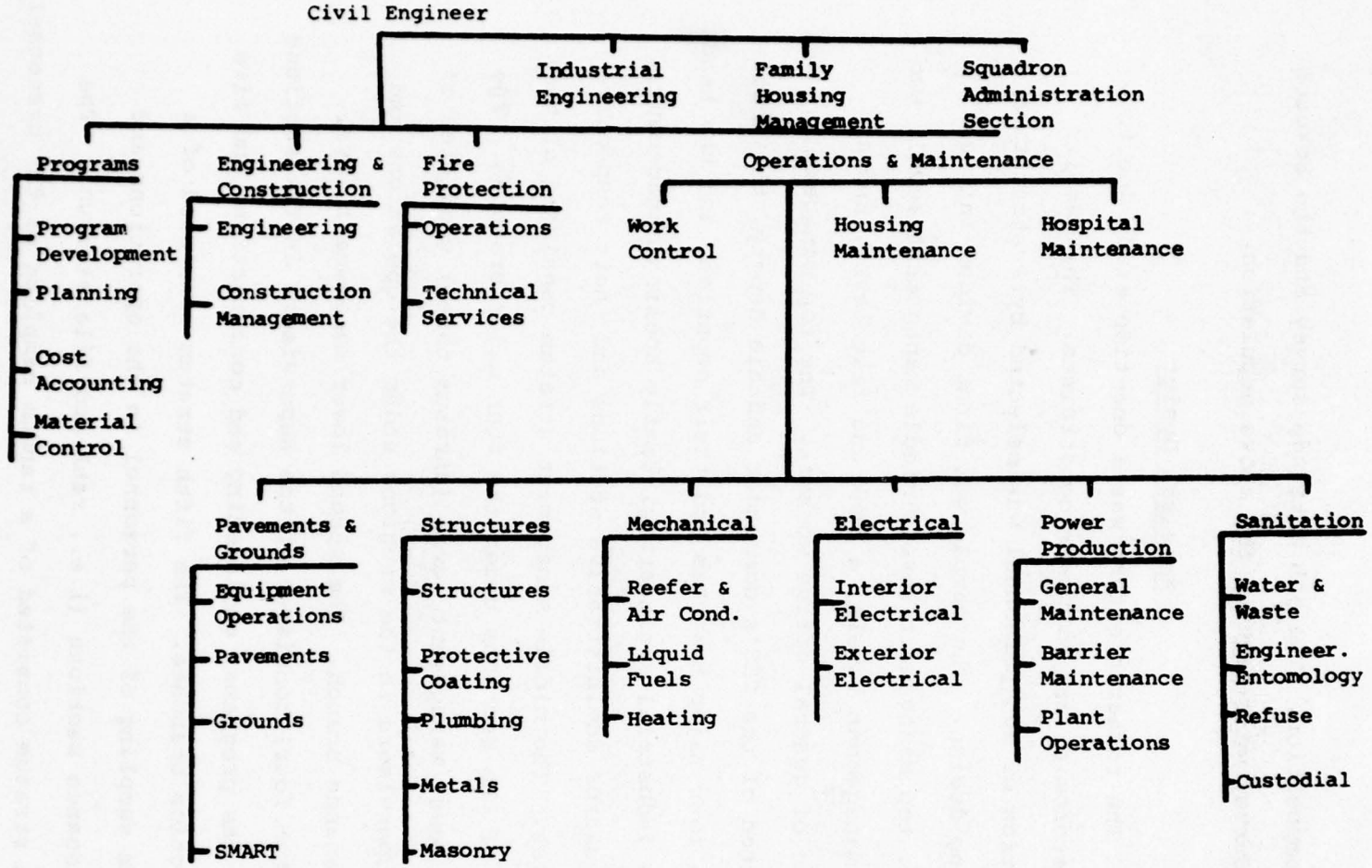


Figure 4. Standard Base Civil Engineer Organization (6:1-4A)

rank composition. The job attitude survey and the Rokeach Value Survey were sent to the above population.

Research Design

The research effort was a one-time study due to time, economic, and manpower constraints. The sample population of 200 personnel was selected by a stratified sampling design. The sample was first divided into six strata: top management level, middle management level, two lower management levels, a rank and file level, and a stratum of general office workers. The top management level consisted of the CES's commander and his deputy, the heads of the four major branches and their deputies, and the heads of the industrial engineering, family housing management, and squadron/administrative sections and their respective deputies. The middle management stratum consisted of the heads of the sections under the four major branches. The first lower management level (stratum three) consisted of the supervisors in the sections under the operations and maintenance branch. The second lower management level (stratum four) consisted of the supervisors in the sections under the programs, engineering and construction, and fire protection branches. The fifth stratum consisted of a random sampling of the personnel in the operations and maintenance sections (i.e., rank and file stratum). The sixth stratum consisted of a random sampling of the personnel

in all of the sections outside of the operations and maintenance branch. The personnel in the first four strata above were a census of the respective strata. The personnel selected from the last two strata above were selected according to the following method. First, fifty letters were randomly selected from a hat and placed in a priority sequence according to their selection from the hat; i.e., c, b, b, a, g, p, u, b, n, g, k, g, n, z, h, g, y, b, a, w, j, h, t, s, v, b, i, v, z, q, u, h, b, x, z, w, w, b, r, g, r, t, k, m, c, r, k, g, q, w. Second, a listing of the names of the appropriate personnel in strata five and six was obtained from the 2750th CES. The listing of names was by sections. Third, a name, or names, were selected from each section contained in the fifth and sixth strata respectively by moving down the above fifty letter sequence listing until one of the letters in the listing matched the first letter in the last name of a person, or persons, in a particular section. Then, the next letter in the fifty letters listing was used as the first letter to begin the selection cycle for selecting names in the next section; and so it went. There were a total of two passes through each of the sections in strata five and six before the total number of random selections which were needed was provided.

The rationale for the stratification was threefold: (1) each stratum was based upon similar positions and

functions, or jobs; (2) it was assumed that the backgrounds of the personnel in each stratum would be similar (i.e., training, education, organizational socialization, and values) (11:47; 13:132); (3) stratification should provide a representative data base from each stratum to allow generalizations concerning the population from the results of the data analysis. The distribution of the personnel in the CES organization, strata, and the percentage of the population surveyed are reflected in Table 1. It is worthy to note that the Operations and Maintenance Branch (O&M) is twice as large as the remaining CES population. Consequently, the number of personnel surveyed in the O&M branch (i.e., strata 3 and 5) was significantly larger than the number of personnel surveyed in strata 1, 2, 4, and 6 in order to provide an accurate representation from all the branches.

The sample data were collected through the use of the job attitude survey and the Rokeach Value Survey. Each research subject completed both surveys as a confidential and voluntary respondent. The data were analyzed to determine if a commonality existed between any of the independent variables of terminal human values and instrumental human values and the dependent variables of growth need strength and motivating potential job scores. If a commonality existed, a further analysis was conducted to determine

TABLE 1

DISTRIBUTION OF THE PERSONNEL IN THE 2750TH CES, RESEARCH STRATAS, AND PERCENTAGE OF POPULATION SURVEYED

	Population Divisions	Distribution
1.	Civil Engineer Sections	58
2.	Programs Branch	120
3.	Engineering & Construction Branch	100
4.	Fire Protection Branch	139
5.	Operation & Maintenance Branch (O&M)	893
	TOTAL	1310

Stratas	Distribution	Number Surveyed
1. Top Management (S1)	15	15
2. Middle Management (S2)	20	20
3. 1st Lower Management (in O&M) (S3)	54	54
4. 2nd Lower Management (excludes O&M) (S4)	20	20
5. Rank in File (in O&M) (S5)	830	54
6. Office Workers (S6)	371	37
		200

Percentage of Population Surveyed

$$\frac{200}{1310} \times 200 = 15\%$$

what relationships existed and to what degree or strength the relationships existed.

Statistical Analysis

A composite rank order of terminal and instrumental human values was determined for each GNS and each MPS grouping by the use of the Statistical Package for the Social Sciences (SPSS) Frequencies' Program according to the medians for the respective human values (19:194-201). Frequency distributions of rankings assigned to a specific value have been found to be other than normal distributions (23:56). Many of the value distributions in this research were highly skewed in one direction or the other (mostly negative skewness). Because the value distributions are not normal and the data level is ordinal, the median ranking determined for each specific value distribution was used as the measure of central tendency for the appropriate value.

The Kendall Coefficient of Concordance (W) was used to test for the possibility of a commonality among the composite terminal and instrumental value rank orders for each GNS and each MPS grouping. The Kendall Coefficient of Concordance expresses the degree of association among more than two variables measured in ranks. It is intended for use at the ordinal data level, which is consistent with the level of the data in this research (24:229).

The Kendall Coefficient of Concordance was used to test the research hypotheses that a relationship exists between terminal and instrumental value hierarchies and GNS, and also that a relationship exists between terminal and instrumental value hierarchies and the MPS groupings. A significance test was conducted on the results of the Kendall Coefficient tests.

Composite rank orders of terminal and instrumental values for each GNS and each MPS grouping were also used to determine if there were any correlations between the composite rank orders (e.g., GNS 7 composite value rank orders correlated with MPS groupings 1, 2, and 3 composite value rank orders; etc.). The Spearman Coefficient of rank Correlation (Rho-r_s) was used in the above correlations (24:245-249). The Spearman Coefficient measures the extent of congruency between various variable rankings. The Spearman Coefficient is a nonparametric test intended for use with ordinal data, which is the level of the data used in this research. The Spearman Coefficient yields a close approximation to product-moment correlation coefficients when the data are more or less continuous (i.e., not characterized by a large number of ties at each rank) (24:289). A significance test was done on the results of the Spearman rank correlation test. The composite value rankings were determined and the correlation tests were conducted to answer the research questions concerning the

identification of a terminal and instrumental value hierarchy for each GNS and each MPS grouping.

Criteria Test

Consistent with other, similar studies on values (5; 11; 13), a .05 level of significance was selected for statistical tests. A Kendall Coefficient at a .02 or greater which is significant at the .05 level would support the respective hypothesis, or hypotheses, that there is a relationship between the appropriate variables. A Spearman Coefficient at a .06 or greater which is significant at the .05 level would indicate that the appropriate composite value hierarchies which are being compared may not represent the value profile of the respective GNS or MPS variable, because the individual composite value hierarchies should be more or less "unique" to only one GNS or MPS variable in order to support the research hypotheses.

CHAPTER III

FINDINGS

Research Sample

A job attitude survey and a Rokeach Value Survey was distributed to each of the selected 200 members of the 2750th Civil Engineering Squadron (CES) as shown in Table 1 of Chapter II. The distribution of the surveys was accomplished by this author carrying the surveys to the Industrial Engineering Section of the 2750th CES for further distribution by organizational mail channels to the pre-selected recipients of the surveys. The completed surveys were later returned to the Industrial Engineering Section or the author by official Air Force mail channels. The author collected the completed surveys which were forwarded to the Industrial Engineering approximately one week after the surveys were originally forwarded to the survey recipients. It was discovered that very few of the surveys from some of the strata were returned. Consequently, a follow-up letter was forwarded to the appropriate strata survey recipients for the purpose of increasing the survey returns in the low return strata. A greater number of surveys was received from the low return strata in the week following the forwarding of the follow-up letter.

A total of 137 surveys were returned to the author. However, 14 of the surveys were disqualified for use in this research for various reasons. Nine of the disqualified surveys were not adequately completed. Three other surveys were not completed at all due to hospitalization, retirement, and dismissal of the selected survey recipients. Finally, the last two surveys were returned unmarked because the recipients stated that they did not want to participate in the research.

Table 2 reflects the demographic information of the 123 respondents who completed the surveys which were used in this research. Items worthy of some note in Table 2 are: (1) the average education level in stratum three (53) was lower than that of the other five strata; (2) a majority of the survey recipients were married; and (3) a majority of the survey recipients were civilians. Otherwise, there appears to be no unexpected or significant information which would preclude logical generalization of the results to other USAF civil engineering squadrons.

The information presented in Table 3 indicates that the overall return of completed surveys per stratum was relatively high for survey questionnaires. In addition, Table 4 indicates that the 123 survey respondents who participated in this research represented approximately 9.4 percent of the personnel in the 2750th CES.

TABLE 2

SUMMARY OF DEMOGRAPHIC INFORMATION FOR RESEARCH SAMPLE POPULATION BY STRATA

	Stratum					
	S1	S2	S3	S4	S5	S6
Stratum Size	15	20	54	20	839	362
Sample Size	12	15	37	15	24	20
Education Range by Years Completed	12 to 17	8 to 17	8 to 13	8 to 13	8 to 13	8 to 17
Average Education Level by Years	16	13	11	13	12	13
Age Range by Years	31 to 55	26 to 60	26 to 60	20 to 60	20 to 60	20 to 60
Average Age Range by Years	41 to 45	46 to 50	43 to 48	36 to 40	36 to 40	36 to 40
Married	12	12	36	14	22	16
Single	0	3	1	1	2	4
Military	2	2	6	6	7	0
Civilian	10	13	31	9	17	20
Government Service Range by Years	2 to 30	2 to 30	5 to 30	1 to 30	1 to 30	1 to 30
Average Government Service Range by Years	17 to 20	21 to 24	21 to 24	13 to 16	13 to 16	13 to 16

TABLE 3

NUMBER OF SURVEYS ADMINISTERED AND RETURNED IN THIS RESEARCH BY STRATA WITH PERCENTAGES

Stratum	Number of Surveys Administered	Number of Completed Surveys Returned	Percentage Returned
Top Management (S1)	15	12	80.0%
Middle Management (S2)	20	15	75.0%
Lower Management in O&M Branch (S3)	54	37	68.5%
Lower Management not in O&M Branch (S4)	20	15	75.0%
Rank and File (S5)	54	24	44.4%
General Office Workers (S6)	37	20	54.0%
TOTALS	200	123	61.5%

$$\frac{\text{Completed Surveys (123)}}{\text{Total Population (1310)}} \times 100 = 9.4\% \text{ of Population}$$

TABLE 4

DISTRIBUTION OF SURVEY RESPONSES BY
GNS SCORES AND STRATA

GNS Scores	Strata S1	S2	S3	S4	S5	S6	Totals
7	5	6	17	5	10	8	51
6	4	5	12	9	5	5	41
5	3	3	6	0	2	4	18
4	0	0	1	1	6	2	10
3	0	0	1	0	1	1	3
Totals	12	15	37	15	24	20	123

While obtaining the demographic information on the survey respondents, the GNS scores and the MPS groupings of the respondents were calculated. The GNS scores and MPS groupings were calculated in order to assign the survey respondents' terminal and instrumental value rankings to a specific GNS score or MPS grouping for statistical hypothesis testing. The calculation of a MPS was discussed in Chapter I, and the MPS groupings were discussed and identified in Chapter II. The calculation of the GNS scores will now be discussed.

GNS Scores Calculation

The GNS score for each survey respondent was calculated by taking the scores of questions 1, 3, 9, 13, 15 and 17 from section six of the job attitude survey and applying the following formula:

$$GNS = \frac{\Sigma((Q1-3)+(Q3-3)+Q9-3)+(Q13-3)+(Q15-3)+Q17-3))}{6}$$

(8:3,73)

The above formula transforms the GNS scores on the job survey from 4 through 10 to 1 through 7. Seven is a high GNS score, and 1 is a low GNS score. Table 4 reflects the distribution of the survey respondents by GNS scores and by strata.

After the GNS scores and MPS groupings and their associated terminal and instrumental value hierarchies were

identified for each survey respondent by the use of the job attitude and Rokeach Value surveys, the extent of association among the terminal and instrumental value hierarchies of respondents with similar GNS scores and similar MPS groupings overall and by stratum was calculated by the use of the Kendall Coefficient of Concordance (24:239).

Kendall Coefficient of Concordance

The Kendall Coefficient of Concordance (W) expresses the degree of association among many rankings of variables. It might be reasonable to determine the correlation between many rankings of variables (k) by pairs with the Spearman or Kendall Rank Correlation Coefficients. However, this procedure would require $\binom{k}{2}$ combinations of rank correlation coefficients. If k is not small, the overall analysis could become extremely tedious. The calculation of the Kendall Coefficient of Concordance (W) is much simpler and less tedious than the above-mentioned pair correlation procedures. In addition, the Kendall Coefficient of Concordance bears a linear relationship to the average Spearman Rank Correlation Coefficient ($r_{s_{AV}}$) taken over all pairs of rankings by the following formula:

$$r_{s_{AV}} = \frac{kW-1}{k-1} \qquad (24:229)$$

If there were perfect agreement among the k judges on the rankings of the N variables, the sum of ranks (R_j) for the variables would be k, 2k, 3k, ... NR, but not necessarily in that order. If there were no agreement among the k judges on the N variables in the rankings, all the R_j's would be approximately equal. In short, W is an index of the divergence of the actual agreement shown in the data from the maximum possible (i.e., perfect) agreement (24:230), because W reflects the degree of agreement among k judges by the degree of variance among N sums of ranks (24:231).

W can only have values between 0 and +1. The reason W cannot be negative is because k judges may all agree, but k judges cannot all disagree completely as long as R is greater than 2. In short, agreement and disagreement for k judges are not symmetrical opposites (24:232).

A high or significant value of W may be interpreted as meaning the k judges are applying the same standard in ranking the N variables which are under study. Therefore, the pooled or composite rank order of N variables may serve as a "standard," especially when there is no relevant external criterion for ordering the variables (24:237).

Concordance Hypothesis Test

As discussed in Chapter I, the purpose of this research was to determine if a relationship exists between terminal and instrumental values and GNS scores and if a relationship exists between terminal and instrumental values and the MPS of a job. The hypothesis test for the Kendall Coefficient of Concordance (W) was as follows:

Null Hypothesis:

H_0: If W=0 and the probability of occurrence (p) < .05 (i.e., $\alpha = .05$) in the W statistics significance test for either a GNS score or a MPS grouping, the terminal or instrumental value rankings are unrelated.

Alternate Hypothesis:

H_1: If $W \neq 0$ and the (p) < .05 in the H_0 W statistics significance test, the terminal or instrumental value rankings for a GNS score or MPS grouping are related to some degree.

The significance of an observed value of W when N is larger than 7 is determined by the probability associated with the chi square (χ^2) distribution for a particular W. When N is larger than 7, the following expression is approximately distributed as chi square:

$$\chi^2 = \frac{S}{\frac{1}{12} kN(N+1)}$$

where: S = sum of squares of the observed deviations of a value's sum of ranks (R_j) from the mean sum of ranks value ($\bar{R}_j$). That is,

$$S = \Sigma\left(R_j - \frac{\Sigma R_j}{N}\right)^2$$

k = number of respondents; i.e., judges.

N = 18 terminal or instrumental values.

Degrees of freedom (df) = N-1 = 18-1 for this research. The above formula is also equal to the following formula, which is computationally simpler and therefore was the formula used in the significance test calculations:

$$\chi^2 = k(N-1)W$$

Consequently, if the chi square value computed from the above formula equals or exceeds the chi square value for $p < .05$ at the degree of freedom (df) = N-1, the null hypothesis that the k rankings are unrelated may be rejected at the .05 level of significance (24:235,236). The above hypothesis test was used to statistically test the significance of the calculated W values in this research.

Calculation of W Statistics

In order to compute the W values for k sets of value rankings, the first task was to calculate the sum of ranks (R_j) for each of the 18 terminal or 18

instrumental values in the respective k x 18 tables for the specific GNS scores and MPS groupings. The R_j for each of the 18 values was then summed and divided by 18 to obtain the mean value of the R_j's. The individual R_j's may then be expressed as a deviation from the mean R_j. Accordingly, the larger the deviations are, the greater is the degree of association among the k sets of ranks (i.e., value hierarchies). Finally, W was calculated by the following formula:

$$W = \frac{S}{\frac{1}{12} k^2 (N^3 - N)}$$

where: S = sum of squares of the observed deviations from the mean of the R_j's.

k = number of respondents; i.e., judges.

N = 18 terminal or instrumental values.

$\frac{1}{12} k^2 (N^3 - N)$ = maximum possible sum of the squared deviations, i.e., the sum of the squared deviations if there were perfect agreement among the k respondents (24:231).

Tables 23-32 in Appendix C reflect the calculating procedures for the W values associated with the value rankings of survey respondents by GNS scores. Table 5 is a sample of the tables in Appendix C. Tables 33-30 in Appendix D contain the sum of ranks obtained from the

TABLE 5

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR
51 GNS SCORE 7 SURVEY RESPONDENTS

Value	Sum of Ranks R_j	$\left[R_j - \frac{\Sigma R_j}{N}\right]^2$
A Comfortable Life	440	2601
An Exciting Life	465	5776
A Sense of Accomplishment	275	12996
A World at Peace	334	3025
A World of Beauty	506	13689
Equality	462	5328
Family Security	177	44944
Freedom	281	11664
Happiness	351	1444
Inner Happiness	407	324
Mature Love	453	4096
National Security	421	1024
Pleasure	549	25600
Salvation	351	1444
Self-Respect	301	7744
Social Recognition	491	10404
True Friendship	437	2304
Wisdom	306	6889
	$\Sigma R_j = 7007$	$S = 16129.7$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = \frac{7007}{18} = 389$$

calculations for the W values associated with the value rankings of survey respondents who were in the same stratum with the same GNS scores.

The results of the calculations of W statistics for terminal and instrumental value hierarchies by survey respondents with different GNS scores are presented in Tables 6 and 7 respectively. The results of the calculations of W statistics for terminal and instrumental values by GNS scores and strata are presented in Tables 41 and 42 of Appendix E. The calculations of the Kendall Coefficient of Concordance statistics for terminal and instrumental values by GNS scores and by strata was accomplished to compare the results against the similar W statistics calculated for the survey respondents with specific GNS scores without respect to their strata. Because of the small number of respondents in each of the stratum relative to a GNS score, caution must be exercised in making any generalizations based upon these data. The author's intentions were only to use the data which was categorized by strata and by GNS scores to determine if any significant relationships or differences could be identified between the value hierarchies and their W values for pooled (composite) GNS scores and the individual value hierarchies and their W statistics relative to a specific stratum and GNS score. The effect of tied ranks on the W values for GNS scores and MPS groupings was also considered, but the

TABLE 6

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS FOR TERMINAL HUMAN VALUES BY GNS SCORES

	GNS Scores				
	7	6	5	4	3
S	161297	213713	49346	12382	2953
W	0.128	0.262	0.314	0.255	0.677
Chi Square	110.87	182.72	96.10	43.41	34.51
P <	0.001	0.001	0.001	0.001	0.010
K	51	41	18	10	3

TABLE 7

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS FOR INSTRUMENTAL HUMAN VALUES BY GNS SCORES

	GNS Scores				
	7	6	5	4	3
S	146167	254062	43637	18633	3057
W	0.116	0.312	0.278	0.384	0.700
Chi Square	100.47	217.23	84.98	65.31	35.72
P<	0.001	0.001	0.001	0.001	0.001
K	51	41	18	10	3

effect was found to be negligible for W values of composite GNS scores and MPS groupings. Although the W values for GNS scores or MPS groupings by strata were slightly raised because of tied ranks, the differences were not considered very significant nor representative because of the small number of respondents in each of these categories (24:233-235).

W Statistics for MPS Groupings

Table 8 reflects the distribution of survey respondents by MPS groupings and by strata. This table did not identify or indicate that any significant relationships or differences existed which would be worthy of further consideration. Therefore, the Kendall Coefficient of Concordance (W) was calculated for the value hierarchies of composite MPS groupings as well as the value hierarchies of MPS groupings by strata in accordance with the same methodology used in the calculations to obtain value hierarchies for GNS scores as previously delineated. Tables 43-48 in Appendix F reflect the results of the sum of ranks calculations for the terminal and instrumental values hierarchies for composite MPS groupings, and Tables 49-54 in Appendix G reflect the results of the sum of ranks calculations for the terminal and instrumental value hierarchies of MPS groupings by strata. Table 9 is a sample of the calculations which are reflected in

TABLE 8

DISTRIBUTION OF SURVEY RESPONSES BY
MPS GROUPINGS AND STRATA

MPS Groupings[1]	Strata S1	S2	S3	S4	S5	S6	Totals
1 (Low)	4	2	8	3	5	6	28
2 (Medium)	6	10	20	10	13	9	68
3 (High)	2	3	9	2	6	5	27
Totals	12	15	37	15	24	20	123

[1] 1 = Low MPS < 125.
2 = Medium MPS 126 to 250.
3 = High MPS 250 to 343.

TABLE 9

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR
28 MPS GROUPING 1 SURVEY RESPONDENTS

Value	Sum of Ranks R_j	$\left[R_j - \frac{\Sigma R_j}{N}\right]^2$
A Comfortable Life	216	2500
An Exciting Life	311	2025
A Sense of Accomplishment	238	784
A World at Peace	222	1936
A World of Beauty	370	10816
Equality	298	1024
Family Security	89	31329
Freedom	214	2704
Happiness	220	2116
Inner Happiness	276	100
Mature Love	302	1296
National Security	304	1444
Pleasure	357	8281
Salvation	307	1681
Self-Respect	167	9801
Social Recognition	372	11236
True Friendship	282	256
Wisdom	247	361
	$\Sigma R_j = 4792$	$S = 89690$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = \frac{4792}{18} = 266$$

Appendix F. Tables 10 and 11 summarize the results of the calculations for the Kendall Coefficient of Concordance statistics for terminal and instrumental value hierarchies of MPS groupings respectively. Tables 55 and 56 in Appendix H summarize similar statistics for the terminal and instrumental value hierarchies by strata for MPS groupings. Having calculated all the W statistics relevant to the research hypotheses, consideration of the results was then warranted.

Coefficient of Concordance Findings

A perusal of the Kendall Coefficient of Concordance statistics for the value hierarchies of composite GNS scores and composite MPS groupings indicated that a significant and positive relationship existed (24:237). The results of the W statistics for composite GNS score seven were questionable because the W value for the composite GNS score of seven for terminal and instrumental values did not pass the research criteria test that W should be greater than .2. Nevertheless, the results were significant at the null hypothesis $p<.001$ level. In addition, the results of the W statistics for GNS scores of three were also viewed with extreme caution because of the very small number of respondents in these categories. Nevertheless, the remaining research findings did include consideration of the composite GNS score three

TABLE 10

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS FOR TERMINAL HUMAN VALUES BY MPS GROUPINGS

	MPS Groupings 1 (Low)	2 (Medium)	3 (High)
S	89690	530339	104474
W	0.236	0.237	0.296
Chi Square	112.29	273.40	135.64
P<	0.001	0.001	0.001
K	28	68	27

TABLE 11

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS FOR INSTRUMENTAL HUMAN VALUES BY MPS GROUPING

	MPS Groupings		
	1 (Low)	2 (Medium)	3 (High)
S	87573	393617	107836
W	0.230	0.176	0.315
Chi Square	109.64	202.92	140.01
P<	0.001	0.001	0.001
K	28	68	27

findings but only for the purpose of possibly edifying the results of the other GNS scores by some small degree. In short, the null hypotheses were rejected for all the composite GNS scores and composite MPS groupings with a caution warning surrounding the GNS scores of seven and three for both the terminal and instrumental value hierarchies. It also appeared wise at that time to disregard the W statistics for GNS scores and MPS groupings by strata, because the small number of respondents in each of these categories could not provide more representative and accurate W statistical findings than the W statistical findings for the composite GNS scores and composite MPS groupings. Neither did the W statistics for the GNS scores and MPS groupings by strata indicate any *relatively significant* inconsistencies between their values and the values of the W statistics for the composite GNS scores and composite MPS groupings.

Since the research hypotheses had been accepted by the author as being true relative to the research criteria test and the W statistics findings for the composite GNS scores and MPS groupings, the research efforts were then directed toward answering the research questions of determining if a specific terminal and instrumental value hierarchy could be associated with survey respondents having a specific GNS score and with survey respondents having been assigned a specific MPS grouping.

Value Hierarchies

In order to investigate the possibility of a relationship existing between a respondent's GNS score and MPS grouping, Table 12 was produced. However, the information on the table did not indicate that any significant relationships existed, but there did appear to be a slight inference that possibly respondents with a high GNS score might tend to be in a high MPS grouping (i.e., MPS grouping 3) and respondents with a low GNS score might tend to be in a low MPS grouping (i.e., MPS grouping 1). Having nothing more than an inference from Table 12's data, the ordinal value hierarchy data collected by the Rokeach Value Surveys were processed using the Statistical Package for the Social Sciences (SPSS) Frequencies Program to find the medians of the values to align the various terminal and instrumental value hierarchies according to rank for GNS scores and MPS groupings (19:194-201). The median was used because the median is the best measure of central tendency for ordinal data. Based upon the medians, the values were ranked from one to eighteen in each of the respective GNS score and MPS grouping categories. Tables 13 and 14 reflect the composite medians and rank orders for terminal and instrumental values by GNS scores, respectively, and Tables 15 and 16 reflect the composite medians and rank orders for terminal and instrumental values by MPS groupings respectively. When tied median scores occurred, the rank orders

TABLE 12

DISTRIBUTION OF SURVEY RESPONSES BY GNS SCORES AND MPS GROUPINGS

GNS Score	MPS Groupings 1 (Low)	2 (Medium)	3 (High)
7	9[1]	25	17
6	6	28	7
5	6	10	2
4	5	4	1
3	2	1	0

[1]These numbers indicate the number of survey respondents in each specific category.

TABLE 13

TERMINAL VALUES MEDIANS AND COMPOSITE RANK ORDERS
FOR SURVEY RESPONDENTS BY GNS SCORES

	GNS Scores					
	7		6		5	
Value	Median	Rank Order	Median	Rank Order	Median	Rank Order
A Comfortable Life	3.16	(1)	6.63	(5)	8.50	(8.5)
An Exciting Life	10.38	(12)	13.40	(15)	15.50	(17.5)
A Sense of Accomplishment	12.25	(15)	7.63	(7)	8.17	(7)
A World at Peace	7.75	(7)	10.00	(8)	7.50	(5)
A World of Beauty	8.00	(8)	15.13	(17)	14.83	(16)
Equality	15.25	(17)	12.75	(14)	12.50	(13.5)
Family Security	11.33	(14)	2.40	(1)	2.10	(1)
Freedom	3.44	(2)	5.25	(2)	6.50	(3)
Happiness	5.71	(4)	5.75	(6)	5.00	(2)
Inner Happiness	7.00	(6)	10.33	(9.5)	8.00	(6)
Mature Love	9.63	(9)	10.33	(9.5)	8.50	(8.5)
National Security	9.88	(10.5)	11.00	(11)	9.50	(11)
Pleasure	10.42	(13)	13.88	(16)	12.50	(13.5)
Salvation	15.69	(18)	12.00	(13)	14.50	(15)
Self-Respect	5.13	(3)	6.38	(3)	6.67	(4)
Social Recognition	6.75	(5)	15.38	(18)	15.50	(17.5)
True Friendship	14.38	(16)	11.08	(12)	10.75	(12)
Wisdom	9.88	(10.5)	6.43	(4)	9.00	(10)
K =	51		41		18	

TABLE 13--Continued

Value	GNS Score 4 Median	4 Rank Order	3 Median	3 Rank Order
A Comfortable Life	6.17	(3)	6.00	(3)
An Exciting Life	9.50	(9)	9.00	(7.5)
A Sense of Accomplishment	10.50	(11)	6.25	(4)
A World at Peace	6.83	(6)	6.75	(5)
A World of Beauty	14.50	(16.5)	15.00	(17)
Equality	10.50	(11)	13.00	(14)
Family Security	4.00	(1)	5.00	(2)
Freedom	4.50	(2)	9.00	(7.5)
Happiness	7.50	(7.5)	11.00	(11)
Inner Happiness	11.25	(13)	12.25	(13)
Mature Love	13.00	(15)	13.25	(15)
National Security	6.50	(4.5)	8.00	(6)
Pleasure	10.50	(11)	10.00	(9)
Salvation	14.50	(16.5)	15.00	(17)
Self-Respect	7.50	(7.5)	4.75	(1)
Social Recognition	16.00	(18)	11.00	(11)
True Friendship	11.50	(14)	15.00	(17)
Wisdom	6.50	(4.5)	11.00	(11)
K =	10		3	

TABLE 14

INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR SURVEY RESPONDENTS BY GNS SCORES

Value	GNS Scores 7 Median	7 Rank Order	6 Median	6 Rank Order	5 Median	5 Rank Order
Ambitious	6.40	(4)	4.75	(4)	7.50	(4.5)
Broadminded	4.63	(3)	8.67	(5)	8.50	(7.5)
Capable	9.13	(7)	4.57	(3)	5.50	(3)
Cheerful	6.69	(5)	13.67	(17)	9.50	(9.5)
Clean	10.88	(12)	10.00	(9)	8.00	(6)
Courageous	11.80	(14)	10.25	(10.5)	7.50	(4.5)
Forgiving	9.75	(9)	11.33	(13)	9.50	(9.5)
Helpful	10.00	(10)	9.00	(6)	8.50	(7.5)
Honest	8.31	(6)	1.86	(1)	1.50	(1)
Imaginative	3.08	(1)	12.67	(15)	14.75	(17)
Independent	13.00	(17)	9.25	(7)	14.50	(16)
Intellectual	9.20	(8)	11.00	(12)	15.83	(18)
Logical	12.58	(16)	9.75	(8)	12.50	(15)
Loving	10.33	(11)	13.25	(16)	10.50	(12.5)
Obedient	12.00	(15)	14.00	(18)	11.17	(14)
Polite	14.78	(18)	11.75	(14)	9.70	(11)
Responsible	11.08	(13)	2.60	(2)	4.00	(2)
Self Controlled	4.08	(2)	10.25	(10.5)	10.50	(12.5)
K =	51		41		18	

TABLE 14--Continued

Value	GNS Scores 4 Median	4 Rank Order	3 Median	3 Rank Order
Ambitious	6.50	(5.5)	8.00	(9)
Broadminded	7.50	(7.5)	11.00	(13)
Capable	3.50	(3)	10.00	(12)
Cheerful	11.50	(12.5)	13.00	(15)
Clean	6.50	(5.5)	5.00	(3)
Courageous	8.50	(9)	7.00	(6.5)
Forgiving	9.50	(10)	12.25	(14)
Helpful	5.50	(4)	8.00	(9)
Honest	1.50	(1)	7.00	(6.5)
Imaginative	16.00	(18)	16.00	(16)
Independent	13.00	(15)	4.00	(2)
Intellectual	15.83	(17)	17.75	(18)
Logical	13.50	(15)	17.00	(17)
Loving	12.50	(14)	8.00	(9)
Obedient	11.50	(12.5)	6.25	(5)
Polite	7.50	(7.5)	9.00	(11)
Responsible	3.30	(2)	3.00	(1)
Self-Controlled	10.50	(11)	6.00	(4)
K =	10		3	

TABLE 15

TERMINAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR SURVEY RESPONDENTS BY MPS GROUPINGS

Value	MPS Groupings					
	1 (Low)		2 (Medium)		3 (High)	
	Median	Rank Order	Median	Rank Order	Median	Rank Order
A Comfortable Life	6.25	(3)	7.50	(7)	9.00	(8)
An Exciting Life	12.50	(13.5)	13.90	(15)	11.13	(12)
A Sense of Accomplishment	8.00	(7)	8.17	(8)	7.00	(6)
A World at Peace	7.50	(5)	9.13	(10)	5.00	(3)
A World of Beauty	13.50	(15)	15.08	(17)	15.63	(18)
Equality	11.50	(11.5)	12.00	(14)	11.67	(13)
Family Security	2.50	(1)	3.25	(3)	2.80	(1)
Freedom	6.50	(4)	6.00	(1.5)	4.25	(2)
Happiness	7.83	(6)	6.00	(1.5)	8.33	(7)
Inner Happiness	10.25	(9)	9.07	(9)	12.71	(15)
Mature Love	11.50	(11.5)	9.50	(11)	12.57	(14)
National Security	12.00	(13.5)	9.88	(12)	9.25	(9)
Pleasure	14.00	(16)	14.10	(16)	14.86	(17)
Salvation	14.50	(17)	7.00	(5.5)	11.00	(11)
Self Respect	5.25	(2)	7.00	(5.5)	6.86	(5)
Social Recognition	15.00	(18)	15.83	(18)	14.25	(16)
True Friendship	11.00	(10)	10.96	(13)	10.13	(10)
Wisdom	8.70	(8)	6.39	(4)	5.40	(4)
K =	28		68		27	

TABLE 16

INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR SURVEY RESPONDENTS BY MPS GROUPINGS

Value	MPS Groupings					
	1 (Low)		2 (Medium)		3 (High)	
	Median	Rank Order	Median	Rank Order	Median	Rank Order
Ambitious	7.00	(4)	6.70	(4)	3.25	(2)
Broadminded	6.00	(3)	8.75	(6)	9.67	(8.5)
Capable	12.70	(15)	5.23	(3)	5.33	(4)
Cheerful	10.00	(9.5)	11.17	(13)	13.75	(16)
Clean	7.50	(5)	9.50	(7.5)	9.67	(8.5)
Courageous	10.00	(9.5)	11.06	(12)	8.63	(6)
Forgiving	10.00	(9.5)	9.50	(7.5)	13.63	(15)
Helpful	10.00	(9.5)	8.05	(5)	8.38	(5)
Honest	2.25	(1)	1.94	(1)	3.33	(3)
Imaginative	14.50	(18)	13.79	(18)	10.38	(11)
Independent	8.83	(6)	12.07	(14)	9.38	(7)
Intellectual	13.50	(16)	13.50	(17)	10.00	(10)
Logical	11.83	(14)	10.50	(11)	11.00	(13)
Loving	11.00	(12)	12.67	(15)	15.33	(17)
Obedient	14.17	(17)	13.07	(16)	15.38	(18)
Polite	11.17	(13)	10.36	(10)	11.20	(14)
Responsible	4.50	(2)	3.30	(2)	3.00	(1)
Self-Controlled	9.83	(7)	9.88	(9)	10.75	(12)
K =	28		68		27	

were assigned by the average of the ranks which would have been assigned if no ties had occurred (24:206). Tables 57-64 in Appendix I and Tables 65-70 in Appendix J reflect information similar to Tables 13 to 16 except the value hierarchies are by GNS scores by strata and MPS groupings by strata. The purpose for the tables in Appendices I and J was to compare the results with similar value hierarchies for composite GNS scores and composite MPS groupings. No significant inconsistencies were noted in the comparisons. Therefore, the research efforts were directed toward a comparison of the value hierarchies by use of the Spearman Rank Correlation Coefficient to determine if the specifically identified value hierarchies for the GNS scores or MPS groupings were similar or different and to determine what were the strengths of the correlations, if any.

Spearman Rank Correlation Coefficient

The Spearman Rank Correlation Coefficient represented by rho(r_s) is a measure of association of two variables which are measured in, at least, an ordinal data scale so they may be ranked in two ordered series. The Spearman Rank Correlation Coefficient measures the association between two ordered (ranked) series for variables by using the differences between each ranking as an indication of the disparity between the two sets of rankings. For example, if one variable is ranked by $X_1, X_2, X_3, \ldots X_N$,

and the second variable is ranked by $Y_1, Y_2, Y_3, \ldots, Y_N$; a perfect correlation would result if $X_i = Y_i$. The difference between ranks is represented by $d_i = X_i - Y_i$. Consequently, the larger the d_i's, the less perfect the correlation would be between the two variables (24:202). To circumvent negative d_i's, d_i^2 is employed. Therefore, the formula for computing the Spearman r_s is:

$$r_s = 1 - \frac{6 \sum_{i=1}^{N} d_i^2}{N^3 - N}$$

where N = number of subjects; i.e., values (24:203,204).

Correlation Hypothesis Test

The hypothesis test used with r_s in this research was:

Null Hypothesis:

H_0: If $r_s = 0$ and the significance test for the comparisons between the value hierarchies has a $p < .05$, the value hierarchies are unrelated.

Alternate Hypothesis:

H_1: If $r_s \neq 0$ and the significance test for H_0 has a $p < .05$, the value hierarchies are related to some degree.

The significance of an obtained r_s under a null hypothesis, when N is 10 or larger, is tested by the following formula:

$$t_s = r_s \sqrt{\frac{N-2}{1-r_s^2}}$$

The t_s is distributed as Student's t with degrees of freedom (df) equal to N-2. Therefore, when the value of a t_s exceeds the value of t at the $p < .05$ level, the null hypothesis that the two variable rankings are unrelated can be rejected at the $\alpha = .05$ level of significance (24:212). The SPSS NONPAR CORR program was utilized to determine the Spearman Rank Correlation Coefficients (r_s) for the comparisons between all the value hierarchies identified in this research. The SPSS NONPAR CORR program considers tied ranks and makes corrections to the r_s values as necessary, and the SPSS NONPAR CORR program also computes the significance test results automatically in accordance with the above formula. The results of the r_s calculations are reflected in Tables 17 and 18 for terminal values hierarchies by composite GNS scores, composite MPS groupings, and GNS scores by strata and by composite GNS scores, composite MPS groupings, and MPS groupings by strata respectively. Tables 19 and 20 reflect the r_s values for the comparisons between all the instrumental values hierarchies. Tables 71 and 72 in Appendix K reflect the r_s values for the comparisons between terminal and instrumental value hierarchies respectively for GNS scores

TABLE 17

SUMMARY MATRIX OF SPEARMAN RANK CORRELATION COEFFICIENTS FOR COMPOSITE TERMINAL VALUES RANK ORDERS BY GMS SCORES, MPS GROUPINGS, AND STRATA FOR GMS SCORES

	GMS Scores					MPS Groupings			Stratum/GMS Score																	
GMS Scores	7	6	5	4	3	1	2	3	S1/7	S2/7	S3/7	S4/7	S5/7	S6/7	S1/6	S2/6	S3/6	S4/6	S5/6	S6/6	S1/5	S2/5	S3/5	S5/5	S6/5	S5/4
7	-	* .48	* .48	* .44	* .47	* .40	.25	.15	-.22	-.31	.11	-.11	-.02	.33	.24	* .49	* .49	* .50	.11	-.07	-.03	* .44	.31	-.07	.33	.11
6		-	** .94	** .79	** .69	** .92	** .90	** .88	* .54	-.07	** .80	* .59	** .71	** .79	* .47	** .87	** .94	** .95	** .72	* .64	* .62	** .81	** .85	* .49	* .65	* .48
5			-	** .72	* .60	** .88	** .80	** .74	* .50	-.04	** .71	* .60	** .72	** .83	* .45	** .75	** .89	** .88	* .66	* .56	* .62	** .97	** .87	* .51	* .57	* .40
4				-	** .81	** .75	* .62	** .80	.17	-.13	* .57	.26	* .53	* .59	.27	** .87	** .88	** .81	.38	* .45	-.12	* .60	* .62	.23	* .55	* .72
3					-	* .65	.35	* .63	-.16	.04	* .54	.07	.36	* .57	* .53	** .82	** .74	** .68	.24	.21	* .53	* .52	* .47	-.11	* .50	** .83
MPS Groupings																										
1						-	** .73	** .82	.34	* .60	* .65	.36	* .61	** .75	.39	** .83	** .85	** .89	* .51	* .48	** .82	* .65	** .72	.32	** .73	* .47
2							-	** .80	** .69	** .75	** .86	** .76	** .73	* .63	.22	** .68	** .81	** .88	** .83	** .74	** .71	* .45	** .78	* .64	* .51	.37
3								-	* .50	* .64	** .82	* .65	** .74	** .83	.31	** .79	** .82	** .86	* .54	** .73	* .63	.38	** .68	* .44	* .55	* .54

* Indicates significance of α = .05 to .002.

**Indicates significance at α = .001.

TABLE 18

SUMMARY MATRIX OF SPEARMAN RANK CORRELATION COEFFICIENTS FOR COMPOSITE TERMINAL VALUES RANK ORDERS BY GNS SCORES, MPS GROUPINGS, AND STRATA FOR MPS GROUPINGS

	GNS Scores					MPS Groupings			Stratum/MPS Groupings																	
GNS Scores	7	6	5	4	3	1	2	3	S1/1	S2/1	S3/1	S4/1	S5/1	S6/1	S1/2	S2/2	S3/2	S4/2	S5/2	S6/2	S1/3	S2/3	S3/3	S4/3	S5/3	S6/3
7	-	* .48	* .48	* .44	* .47	* .40	.25	.15	* .42	** .76	* .42	* .63	-.15	-.07	.24	-.01	* .63	-.07	-.08	.03	* .50	* .42	** .69	.31	.35	.26
6		-	** .94	** .79	** .69	** .92	** .90	** .88	.35	-.10	-.16	* .42	* .62	* .49	* .45	.39	.38	* .62	* .42	** .75	* .40	.24	.29	** .87	** .88	** .84
5			-	** .72	** .60	** .88	** .80	** .74	** .79	* .55	.37	** .89	* .57	.30	** .70	* .60	** .90	* .59	.38	* .62	** .83	** .71	** .83	** .80	** .78	** .79
4				-	** .81	** .75	* .62	** .80	** .79	* .59	* .44	** .90	.38	.34	* .63	* .48	** .86	.27	** .67	** .75	** .87	** .74	** .79	** .66	** .88	** .72
3					-	* .65	.35	* .63	* .57	.27	.04	* .72	.05	.02	** .73	** .70	* .66	-.05	.33	* .50	** .80	* .61	** .73	.39	** .75	* .61
MPS Groupings																										
1						-	** .73	** .82	** .81	* .45	.30	** .78	* .42	.33	** .85	** .66	** .69	* .42	* .45	** .72	** .83	** .82	** .87	** .78	** .90	** .77
2							-	** .80	** .68	** .70	.38	** .85	** .76	* .61	* .53	.38	** .89	** .79	.28	** .69	** .69	* .62	** .93	** .88	** .70	** .66
3								-	* .59	** .66	.14	** .73	** .70	* .56	** .67	* .60	** .81	* .51	* .64	** .89	** .83	** .72	** .86	** .85	** .93	** .88

* Indicates significance at α = .05 to .002.

** Indicates significance at α = .001.

TABLE 19

SUMMARY MATRIX OF SPEARMAN RANK CORRELATION COEFFICIENTS FOR COMPOSITE INSTRUMENTAL VALUES RANK ORDERS BY GNS SCORES, MPS GROUPINGS, AND STRATA FOR GNS SCORES

	GNS SCORES					MPS Groupings			Stratum/GNS Scores															
GNS Scores	7	6	5	4	3	1	2	3	S1/7	S2/7	S3/7	S4/7	S5/7	S6/7	S1/6	S2/6	S3/6	S4/6	S5/6	S6/6	S1/5	S2/5	S3/5	S5/5	S6/5	S5/4
7	-	.11	.12	.04	-.31	.14	.15	.15	.11	.08	.27	-.05	.22	.32	.22	.27	-.12	.31	.19	.67**	.65*	.75**	.58*	.67**	.87**	.83**
6		-	.65*	.70**	.30	.65**	.82**	.90**	.04	.65*	.73**	.70**	.61*	.62*	.74**	.82**	.90**	.77**	.55*	.72**	.69**	.74**	.55*	.61*	.87**	.90**
5			-	.93**	.38	.64*	.87**	.66*	-.30	.61*	.81**	.38	.70**	.69**	.62*	.57*	.58*	.41*	.64*	.23	.29	.05	.10	.39*	.46*	.58*
4				-	.45*	.63*	.92**	.66**	.05	.59*	.81**	.37	.65*	.70**	.64*	.50*	.61*	.47*	.63*	.65*	.85**	.37	.32	.21	.69**	.47*
3					-	.56*	.31	.35	.27	.31	.40*	.23	-.02	.39	.22	-.04	.40*	.11	.11	.48*	.44*	.84**	.28	.50*	.63*	.64*
MPS Groupings																										
1						-	.69**	.57*	.02	.58*	.01	.44*	.39	.62*	.64*	.43*	.66**	.37	.30	-.03	-.08	.43*	.02	.16	-.05	-.01
2							-	.69**	-.01	.14	.60*	.62*	.42*	.55*	.60*	-.01	.47*	.63**	.76**	-.01	.06	.35	.01	-.02	-.01	.20
3								-	.65*	.62*	.53*	.76**	.54*	.63*	.67**	.45*	.61*	.61*	.48*	.59*	.55*	.02	.47*	.40	.49*	.70**

* Indicates significance at α = .05 to .002.

** Indicates significance at α = .001.

TABLE 20

SUMMARY MATRIX OF SPEARMAN RANK CORRELATION COEFFICIENTS FOR COMPOSITE INSTRUMENTAL VALUES RANK ORDERS BY GNS SCORES, MPS GROUPING, AND STRATA FOR MPS GROUPINGS

	GNS Scores					MPS Groupings			Stratum/MPS Groupings																	
GNS Scores	7	6	5	4	3	1	2	3	S1/1	S2/1	S3/1	S4/1	S5/1	S6/1	S1/2	S2/2	S3/2	S4/2	S5/2	S6/2	S1/3	S2/3	S3/3	S4/3	S5/3	S6/3
7	-	.11	.12	.04	-.31	.14	.15	.15	.20	-.01	-.05	.21	.22	.08	.09	.32	.33	.24	.18	.08	.19	.04	.01	.18	.23	.27
6		-	.65*	.70**	.30	.65*	.82**	.90**	.44*	.54*	.25	.85**	.81**	.53*	.63*	.67**	.69**	.31	.38	.80**	.81**	.82**	.69**	.64**	.79**	.76**
5			-	.93**	.38	.64*	.87**	.66*	.73**	.57*	.43*	.53*	.32	.48*	.41*	.76**	.82**	.60*	.37	.71**	.78**	.89**	.74**	.67**	.50*	.70**
4				-	.45*	.63*	.92**	.66**	.64**	.66*	.31	.55*	.37	.46**	.31	.77**	.86**	.67**	.29	.66**	.71**	.95**	.77**	.77**	.54*	.68**
3					-	.56*	.31	.35	.22	.35	.15	.07	.32	.19	-.05	.35	.10	.20	.20	.33	.45*	.41*	.34	.44*	.41*	.39
MPS Groupings																										
1						-	.69**	.57*	.58*	.48*	.38	.52*	.54*	.63*	.44*	.68**	.60*	.32	.36	.59*	.77**	.66**	.62*	.62*	.54*	.58*
2							-	.69**	.59*	.62*	.30	.78**	.57*	.49*	.44*	.82**	.92**	.65*	.30	.67**	.78**	.95**	.81**	.81**	.59*	.67**
3								-	.41*	.62*	.16	.65*	.68**	.54*	.60*	.55*	.56*	.13	.40*	.89**	.75**	.74**	.65*	.59*	.84**	.89**

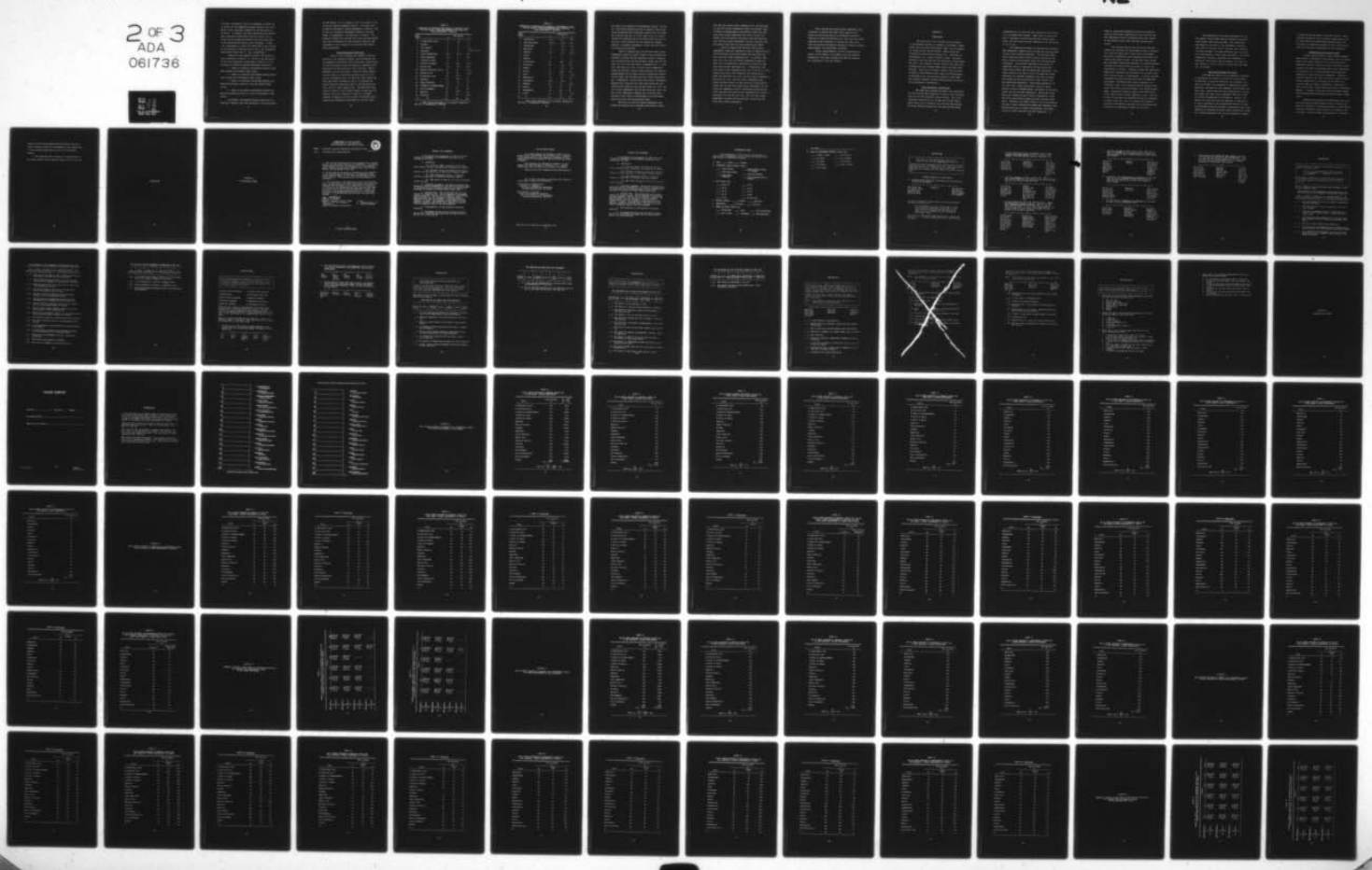
* Indicates significance at α = .05 to .002.

**Indicates significance at α = .001.

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by strata, and Tables 73 and 74 in Appendix K reflect the r_s values for the comparisons between terminal and instrumental value hierarchies respectively for MPS groupings by strata. In essence, the eight above-mentioned Spearman Rank Correlation Coefficients' matrices reflect the r_s values for the comparisons between the value hierarchies of the designated GNS scores or MPS groupings. In addition, appropriate r_s values were identified by one asterisk or two asterisks in the matrices if the r_s null hypothesis significance levels were $\alpha = .001$, respectively.

Relative to the research criteria, the results of the W statistics in Tables 6, 7, 10 and 11 and the results of the value hierarchies correlations in Tables 17 to 20 revealed the following research hypotheses conclusions:

1. There is a positive relationship between growth need strength and terminal human values.

2. There is a positive relationship between growth need strength and instrumental human values.

3. There is no positive relationship between the motivating potential score of a job and terminal human values.

4. There is no positive relationship between the motivating potential score of a job and instrumental human values.

In addition, the research findings identified the "standard" terminal value and instrumental value hierarchies

for GNS scores 7 to 4 in Tables 13 and 14 in answer to one of the two research questions (24:237). The value hierarchies for GNS score 3 survey respondents in Tables 13 and 14 were not considered "standards" because of the small number of respondents in the GNS score 3 category. The research findings also revealed that there were significant rank order differences for some terminal values and some instrumental values relative to the various GNS scores' value hierarchies.

Value Hierarchies Differences

Tables 21 and 22 present the results of the comparisons of the composite terminal value hierarchies and the composite instrumental value hierarchies, respectively, for GNS score seven versus the respective composite value hierarchies for GNS scores six, five, and four. Where a difference of six rank orders or greater existed between the rank order of a particular terminal value or a particular instrumental value for GNS score seven versus the other GNS scores in Tables 21 and 22, an asterisk was placed beside the particular value in the GNS scores six, five, and four value ordering only. The GNS score seven values in Tables 21 and 22 were aligned in their priority sequence from one to eighteen to serve as a "pseudo" standard in Tables 21 and 22 in order to highlight and to identify the significant differences in the rank orders

TABLE 21

COMPARISON OF COMPOSITE RANK ORDERS OF TERMINAL VALUES FOR GNS SCORE 7 SURVEY RESPONDENTS WITH OTHER GNS SCORE RESPONDENTS' RANKINGS

Rank Order		GNS Scores 7	6	5	4
1	A Comfortable Life	5	8.5	3	
2	Freedom	2	3	2	
3	Self-Respect	3	4	7.5	
4	Happiness	6	2	7.5	
5	Social Recognition	18*	17.5*	18*	
6	Inner Happiness	9.5	6	13*	
7	A World at Peace	8	5	6	
8	A World of Beauty	17*	16*	16.5*	
9	Mature Love	9.5	8.5	15*	
10	National Security (10.5)	11	11	4.5	
11	Wisdom (10.5)	4*	10	4.5*	
12	An Exciting Life	15	17.5	9	
13	Pleasure	16	13.5	11	
14	Family Security	1*	1*	1*	
15	A Sense of Accomplishment	7*	7*	11	
16	True Friendship	12	12	14	
17	Equality	14	13.5	11*	
18	Salvation	13	15	16.5	
K =	51	41	18	10	

*Rank order difference of 6 or greater compared to GNS Score 7 respondents' rankings.

TABLE 22

COMPARISON OF COMPOSITE RANK ORDERS OF INSTRUMENTAL VALUES FOR GNS SCORE 7 SURVEY RESPONDENTS WITH OTHER GNS SCORE RESPONDENTS' RANKINGS

Rank Order	7	GNS Scores 6	5	4
1	Imaginative	15*	17*	18*
2	Self-Controlled	10.5*	12.5*	11*
3	Broadminded	5	7.5	7.5
4	Ambitious	4	4.5	5.5
5	Cheerful	17*	9.5	12.5*
6	Honest	1	1	1
7	Capable	3	3	3
8	Intellectual	12	18*	17*
9	Forgiving	13	9.5	10
10	Helpful	6	7.5	4*
11	Loving	16	12.5	15
12	Clean	9	6*	5.5*
13	Responsible	2*	2*	2*
14	Courageous	10.5	4.5*	9
15	Obedient	18	14	12.5
16	Logical	8*	15	15
17	Independent	7*	16	15
18	Polite	14	11*	7.5*
K =	51	41	18	10

*Rank order difference of 6 or greater compared to GNS Score 7 respondents' rankings.

for some of the terminal and instrumental values. The use of a rank order difference of six to identify significant value differences was an arbitrary selection by the author. The rationale was that if a rank order of six or greater existed the difference would be greater than one-third of the total value hierarchy for the respective eighteen terminal or eighteen instrumental values, and this difference would be significant.

Table 21 revealed that the GNS score seven survey respondents ranked the social values of Social Recognition and World of Beauty and the competence values of Imaginative and Self-Controlled significantly higher than the GNS score six, five, and four survey respondents did. In addition, GNS score six, five, and four survey respondents ranked the personal values of Family Security and Sense of Accomplishment and the moral value of Responsible significantly higher than the GNS score seven survey respondents did. Consequently, the GNS score seven survey respondents appeared more concerned with their self-esteem and self-actualization needs than did the GNS scores six, five, and four survey respondents, and the GNS scores six, five, and four survey respondents appeared more concerned about satisfying their safety, belongingness, and self-esteem needs than their self-actualization needs.

GNS score six and four survey respondents also ranked the personal value of Wisdom significantly higher

than GNS score seven survey respondents did, and GNS score six and five survey respondents ranked the personal value of Sense of Accomplishment significantly higher than GNS score seven survey respondents did, which is also consistent with the previous conclusions that GNS score six, five, and four survey respondents are more concerned with self-esteem needs than with self-actualization needs.

Table 22 revealed that GNS score seven survey respondents ranked the competence values of Imaginative and Self-Controlled significantly higher than GNS score six, five, and four survey respondents did. In addition, GNS score six, five, and four survey respondents ranked the moral value of Responsible significantly higher than GNS score seven survey respondents did. Consequently, GNS score seven survey respondents were more consistent in their concern about their self-esteem and self-actualization needs than GNS score six, five, and four survey respondents. GNS score six, five, and four survey respondents also ranked the moral values of Clean and Polite significantly higher than the GNS score seven survey respondents did and ranked the competence value of Intellectual significantly lower than GNS score seven survey respondents did, which is consistent with the GNS score six, five, and four survey respondents' greater concern with moral values than GNS score seven survey respondents.

Thus, the GNS score seven survey respondents were consistent in seeking the higher order needs of self-esteem and self-actualization as presented by Maslow's hierarchy of needs and GNS score six, five, and four survey respondents were consistent in seeking the lower order needs as presented by Maslow's hierarchy of needs of safety, belongingness, and self-esteem (15:80-92).

Having accomplished all of the calculations presented in this chapter in accordance with the research methodology, the author analyzed this data and presents his conclusions in the next chapter.

CHAPTER IV

CONCLUSIONS

The objective of this research was to determine if relationships existed (1) between an individual's human values and his growth need strength (GNS), and (2) between his values and his job motivation. Human values were classified as being either terminal (i.e., end-state) or instrumental (i.e., mode-of-conduct) values. The basic hypotheses were that positive and significant relationships did exist. The research findings revealed that such relationships did exist between human values and growth need strength. There was no evidence, however, that any relationships existed between human values and job motivation, as measured by the job motivating potential score (MPS). The resultant research findings centered mainly around the value hierarchies' correlations.

Value Hierarchies Correlations

The comparisons between the human value hierarchies for the different GNS categories of seven to four indicated that only two GNS categories really existed. One of the categories consisted of all the GNS seven survey respondents, which will be referred to as the high GNS category. The other category consisted of the remaining GNS survey

respondents of six, five, and four, which will be referred to as the medium GNS category. There were not sufficient data to adequately classify the GNS three survey respondents, and there were no survey respondents with GNS scores of two or less.

The comparisons between the high GNS and the medium GNS respondents' composite value hierarchies uncovered some distinct value ranking differences. The high GNS respondents ranked the social values of Social Recognition and World of Beauty significantly higher than did medium GNS respondents. The high GNS respondents also ranked the competence values of Imaginative and Self-Controlled significantly higher than did medium GNS respondents. The higher ranking of the above social and competence values indicated that high GNS respondents were more concerned with esteem and self-actualization values overall than were medium GNS respondents. Medium GNS respondents, on the other hand, ranked the personal values of Family Security, Sense of Accomplishment, and Wisdom significantly higher than did high GNS respondents. Medium GNS respondents also ranked the moral values of Responsible, Clean, and Polite significantly higher than did high GNS respondents. Therefore, the higher ranking of the above personal and moral values indicated that medium GNS respondents were concentrating more on esteem, belongingness, and safety values as a whole than were high GNS respondents. In

addition, medium GNS respondents ranked the competence value of Intellectual significantly lower than did high GNS respondents, which is consistent with their concern of self-esteem values rather than self-actualization values.

The findings indicate that while high GNS individuals are concerned with advancement within an organization, they are aware also of their social environment. They wish to contribute and be recognized both within and without their place of work. On the other hand, medium GNS respondents placed more importance on narrower personal interests and staying within the norms or rules of an organization or society. Therefore, medium GNS respondents appear more concerned with maintaining their present position or status within an organization. In brief, high GNS individuals are more self-motivated than are medium GNS individuals. The GNS category (high or medium) of an individual, then, can be inferred from his relative rankings of the eleven values discussed in the preceding paragraph. Conversely, knowing a person's GNS infers which of the eleven values are more important to him. This conclusion is consistent with Maslow's theory of a hierarchy of needs (15:80-105), and is in keeping with Rokeach's contention that Maslow's hierarchy can be profitably used to identify an individual's needs (23:16,17,327).

The comparisons of the value hierarchies for the low, medium, and high MPS categories showed no relationships between human values and MPS. Not unexpectedly, approximately one-fourth of the respondents considered their jobs as enriched, half as enriched, and one-fourth as highly enriched. But these groupings bore no significant relationships to their value hierarchies. The survey respondents, therefore, used some other parameter, or parameters, such as pay, job environment, job scope, or goal setting, in lieu of values to judge their job's MPS (20; 27-279-394).

Growth Need Strength and Values

Since GNS has proven to be an important ingredient in determining the success or failure of job enrichment (20:396,402), it would be beneficial for a manager to be aware of the GNS of his employees to appropriately match employees, employees and their managers, and employees and their jobs. Because GNS and value hierarchies are related, the manager can infer from an employee's GNS what values are central determinants of his behavior. Further, the manager can infer what goals the employee is committed to. In short, knowledge of the relationships between the high or medium GNS categories and their corresponding social and competence or personal and moral values, respectively, would be a valuable management tool for any supervisor to employ

in promoting job enrichment in his work section. These research conclusions can be logically generalized to all Air Force Base Civil Engineering organizations in the continental United States because of their similar functions and the similar backgrounds of their personnel.

Recommendations for Further Study

Further generalization of these findings depends upon studies to determine if the terminal value and instrumental value order rankings of the significant social, competence, personal, and moral values identified in this research for high and medium GNS score survey respondents are consistent for all high and medium GNS individuals regardless of their particular occupations. Rokeach's research indicated that there are certain values for particular occupations or roles that can be used to discriminate among or predict individuals' occupations or roles (23:144-188). Beyond these occupational differences, however, it appears likely that value differences between high and medium GNS individuals are similar across occupations.

Rokeach also pointed to the possibility that fourteen developmental value patterns exist for various combinations (subsets) of the eighteen terminal values and the eighteen instrumental values relative to a person's age (23:72-82). Further studies could determine if the rank

orders of the high and medium GNS significant value subsets of terminal values and instrumental values identified in this research change when the age of an individual changes.

Such research would increase our understanding of why people behave the way they do, both on and off the job.

APPENDICES

APPENDIX A

JOB ATTITUDE SURVEY

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (AU)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

REPLY TO ATTN OF: AFIT/LSGR (LSSR 19-77B/Captain Pringle/257-4407)

1 June 1977

SUBJECT: Job Motivation Questionnaires

TO:

1. The attached questionnaires were prepared by a research team at the Air Force Institute of Technology. The purpose of the questionnaires is to determine if a relationship exists between an individual's human values, his job motivation, and the design of his job.

2. Please provide an answer or comment for each question in the attached two questionnaires. Headquarters USAF Survey Control Number 77-118 has been assigned to these questionnaires. Your participation in this research is voluntary.

3. Your responses to the questions will be held confidential. Please remove this cover sheet before returning the completed questionnaires. Your cooperation in providing this data will be appreciated and will be very beneficial in evaluating the relationship between human values, job motivation, and a job motivating potential. Please seal and return the completed questionnaires in the attached envelope to 2750th ABWg/DEI Office within one week after receipt.

Henry W. Parlett

HENRY W. PARLETT, Colonel, USAF
Associate Dean for Graduate Education
School of Systems and Logistics

2 Atch
1. Questionnaires (2)
2. Return Envelope

PRIVACY ACT STATEMENT

In accordance with paragraph 30, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

a. Authority:

(1) 10 U.S.C. 8012, *Secretary of the Air Force Powers, Duties, Delegation by Compensation;* and/or

(2) EO 9397, 22 Nov 43, *Numbering System for Federal Accounts Relating to Individual Persons;* and/or

(3) DOD Instruction 1100.13, 17 Apr 68, *Surveys of Department of Defense Personnel;* and/or

(4) AFR 30-23, 22 Sep 76, *Air Force Personnel Survey Program.*

b. Principal purposes. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine Uses. The survey data will be converted to information for use in research of management related problems. Results of the research, based on the data provided, will be included in written master's theses and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.

JOB ATTITUDE SURVEY

This questionnaire is designed to assist in the study of your job and show how it affects you. Summaries of the survey data will be reported to managers of your organization for the purpose of improving your job, where necessary.

The questions are designed to measure *your* perceptions of your job and *your* reaction to it. Please answer each item as honestly and frankly as possible.

Thank you for your cooperation and participation.

For further information concerning this survey or its contents, contact the following:

Lt Col Denis D. Umstot, Ph.D.
Professor of Management
Air Force Institute of Technology
Wright-Patterson AFB, OH 45433

Capt Charles C. Pringle
School of Systems and Logistics
Air Force Institute of Technology
Wright-Patterson AFB, OH 45433

USAF SCN 77-118 (Expires 30 September 1977)

PRIVACY ACT STATEMENT

In accordance with paragraph 30, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

a. Authority:

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d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.

BIOGRAPHICAL DATA

All information in this section will be held in the strictest confidence; no one in your organization will have access to individual responses.

1. SEX: _____Male _____Female

2. EDUCATION (check highest level):

_____ Grade School	_____ Some Business School of College
_____ Some High School	_____ College Graduate
_____ High School Graduate	_____ Post graduate Work or Degree

3. AGE (check one):

_____ Under 20	_____ 41-45
_____ 20-25	_____ 46-50
_____ 26-30	_____ 51-55
_____ 31-35	_____ 56-60
_____ 36-40	_____ 60 and Over

4. MARITAL STATUS: _____Single _____Married

5. RANK/GRADE: _____Military _____Civilian

6. WHERE YOU WORK (check one:

_____ DE/DEI/DEH	_____ O&M	_____ Fire Protection
_____ Eng & Const	_____ Programs	_____ Sqd Admin/Tng

7. JOB TITLE:_____

8. YEARS IN GOVERNMENT SERVICE (check one):

_____ 1 year or less	_____ 17-20 years
_____ 2-4 years	_____ 21-24 years
_____ 5-8 years	_____ 25-30 years
_____ 9-12 years	_____ Over 30 years
_____ 13-16 years	

SECTION ONE

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

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

A sample question is given below.

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

1——2——3——4——5——6——7

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

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

If, for example, your job requires you to work with mechanical equipment a good deal of the time--but also requires some paperwork--you might circle the number six, as was done in the example above.

If you do not understand these instructions, please ask for assistance. If you do understand them, turn the page and begin.

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

1———2———3———4———5———6———7

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

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

1———2———3———4———5———6———7

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

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

1———2———3———4———5———6———7

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

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

1———2———3———4———5———6———7

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

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

1———2———3———4———5———6———7

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

6. To want extent do managers or coworkers let you know how well you are doing your job?

1———2———3———4———5———6———7

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

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

1———2———3———4———5———6———7

Very little; the job itself is set up so I could work forever without finding out how well I am doing.

Moderately; sometimes doing the job provides "feedback" to me; sometimes it does not.

Very much; the job is set up so that I get almost constant "feedback" as I work about how well I am doing.

SECTION TWO

Listed below are a number of statements which could be used to describe a job.

You are to indicate whether each statement is an accurate or an inaccurate description of your job.

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

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

How accurate is the statement in describing your job?

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

___ 1. The job requires me to use a number of complex or high-level skills.

___ 2. The job requires a lot of cooperative work with other people.

___ 3. The job is arranged so that I do not have the chance to do an entire piece of work from beginning to end.

___ 4. Just doing the work required by the job provides many chances for me to figure out how well I am doing.

___ 5. The job is quite simple and repetitive.

___ 6. The job can be done adequately by a person working alone--without talking or checking with other people.

___ 7. The supervisors and coworkers on this job almost never give me any "feedback" about how well I am doing in my work.

How accurate is the statement in describing your job?

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

___ 8. This job is one where a lot of other people can be affected by how well the work gets done.

___ 9. The job denies me any chance to use my personal initiative or judgment in carrying out the work.

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

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

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

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

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

___15. There is good rapport between superiors and the subordinates in this organization.

___16. When there is personal conflict in the organization, those involved openly discuss the problem.

___17. My immediate supervisor communicates often with me.

___18. For every situation there is an appropriate regulation.

___19. I am encouraged to be innovative in the performance of my tasks.

___20. My supervisor provides me with adequate information to perform my job in the best manner.

___21. Rewards and encouragement outweigh threats and criticism.

___22. The working environment is relaxed.

___23. The chain of command is strictly enforced.

How accurate is the statement in describing your job?

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

___24. It is hard to get people higher up in this organization to listen to people at my level.

___25. I am encouraged to say what I really think.

___26. Strict obedience of orders is important here.

___27. Relations between different levels of organization are informal.

SECTION THREE

Every employee produces something in his of her work. It may be a "product" or it may be a "service." It is sometimes difficult, however, to identify that product or service. Listed below are some of the products or services produced at your unit.

- Service Calls Received
- Typed Pages
- Work Orders Processed
- Projects Designed
- Material Ordered
- Inspections Conducted
- Job Orders Completed
- Reports Prepared
- Equipment Maintained
- Procedures written

These are just a few of the products or services found at your unit. There are others, of course. We would like you to think carefully of the things you produce, and also of the things produced by those people who work with you in your work group (i.e., everyone who works for your boss).

There is a scale provided for each question. Select the response number (1 through 5) that most accurately reflects the production in your work group.

1. Thinking now of the various things produced by the people you know in your work group, how much are they producing?

1	2	3	4	5
It is very low	It is fairly low	It is neither high nor low	It is fairly high	Their production is very high

2. How good would you say is the quality of the products or services produced by the people you know in your work group?

1	2	3	4	5
The quality is poor	The quality is not too good	The quality is fair	The quality is good	The quality is excellent

3. Do the people in your work group seem to get maximum output from the resources (money, people, equipment, etc.) they have available? That is, how efficiently do they work?

1	2	3	4	5
They do not work efficiently at all	Not too efficient	Fairly efficient	They are very efficient	They are extremely efficient

SECTION FOUR

Now please indicate how you personally feel about your job.

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

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

How much do you agree with the statement?

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

___ 1. In this organization people are rewarded in proportion to the excellence of their performance.

___ 2. Generally speaking, I am very satisfied with this job.

___ 3. There is a great deal of criticism in this organization.

___ 4. I frequently think of quitting this job or asking for a transfer.

___ 5. There are not enough rewards or recognition given in this organization for doing good work.

___ 6. I am generally satisfied with the kind of work I do in this job.

___ 7. My opinion of myself goes up when I do this job well.

___ 8. I feel a great sense of personal satisfaction when I do this job well.

How much do you agree with the statement?

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

___ 9. I feel bad and unhappy when I discover that I have performed poorly on this job.

___ 10. My own feelings generally are not affected much one way of the other by how well I do this job.

SECTION FIVE

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

How satisfied are you with this aspect of your job?

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

___ 1. The amount of job security I have.

___ 2. The amount of pay and fringe benefits I receive.

___ 3. The amount of personal growth and development I get doing my job.

___ 4. The people I talk to and work with on my job.

___ 5. The degree of respect and fair treatment I receive from my boss.

___ 6. The feeling of worthwhile accomplishment I get from doing my job.

___ 7. The chance to get to know other people while on the job.

___ 8. The amount of support and guidance I receive from my supervisor.

___ 9. The degree to which I am fairly paid for what I contribute to this organization.

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

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

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

How satisfied are you with this aspect of your job?

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

___13. The amount of challenge in my job.

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

SECTION SIX

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

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

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

4———5———6———7———8———9———10

Would like having this only a moderate amount (or less)

Would like having this very much

Would like having this extremely much

___ 1. A high degree of job security.

___ 2. Opportunities for personal growth and development on the job.

___ 3. Fairly difficult and challenging work assignments.

___ 4. Working as a member of a group rather than by myself.

___ 5. Very high pay.

___ 6. Chances to exercise independent thought and action in my job.

___ 7. A low-risk job where I do not have to stick my neck out to get ahead.

___ 8. Coworkers who pay a great deal of attention to the feelings of others at work.

___ 9. Stimulating and challenging work.

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

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

4 ——— 5 ——— 6 ——— 7 ——— 8 ——— 9 ——— 10

Would like having this very much

Would like having this extremely much

___10. Working alone on the job instead of with a group of people.

___11. A great deal of responsibility.

___12. Generous retirement benefits.

___13. Opportunities to be creative and imaginative in my work.

___14. Opportunities to learn about nonbusiness-related matters in the world around me.

___15. A sense of worthwhile accomplishment in my work.

___16. A dangerous job.

___17. Opportunities to learn new things from my work.

___18. Chances to work together with others in carrying out tasks.

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

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

4———5———6———7———8———9———10

Would like having this only a moderate amount (or less)

Would like having this very much

Would like having this extremely much

___10. Working alone on the job instead of with a group of people.

___11. A great deal of responsibility.

___12. Generous retirement benefits.

___13. Opportunities to be creative and imaginative in my work.

___14. Opportunity to talk about nonbusiness-related matters with those around me.

___15. A sense of worthwhile accomplishment in my work.

___16. A dangerous job.

___17. Opportunities to learn new things from my work.

___18. Chances to work together with others in carrying out the job.

SECTION SEVEN

For the following questions choose the response that best reflects your feelings about your job. Circle the number that most accurately reflects your feelings.

1. Which one of the following shows how much of the time you feel satisfied with your job?

   1. All the time
   2. Most of the time
   3. A good deal of the time
   4. About half of the time
   5. Occasionally
   6. Seldom
   7. Never

2. Choose the one of the following statements which best tells how well you like your job?

   1. I hate it
   2. I dislike it
   3. I don't like it
   4. I am indifferent to it
   5. I like it
   6. I am enthusiastic about it
   7. I love it

3. Which one of the following best tells how you feel about changing your job?

   1. I would quit this job at once if I could
   2. I would take almost any other job in which I could earn as much as I am earning now
   3. I would like to change both my job and my occupation
   4. I would like to exchange my present job for another one
   5. I am not eager to change my job, but I would do so if I could get a better job
   6. I cannot think of any jobs for which I would exchange
   7. I would not exchange my job for any other

4. Which one of the following shows how you think you compare with other people?

   1. No one likes his job better than I like mine
   2. I like my job much better than most people like theirs
   3. I like my job better than most people like theirs
   4. I like my job about as well as most people like theirs
   5. I dislike my job more than most people dislike theirs
   6. I dislike my job much more than most people dislike theirs
   7. No one dislikes his job more than I dislike mine

APPENDIX B

ROKEACH VALUE SURVEY

VALUE SURVEY

BIRTH DATE _____ SEX: MALE _____ FEMALE _____

CITY and STATE OF BIRTH _____

NAME (FILL IN ONLY IF REQUESTED) _____

© 1967 BY MILTON ROKEACH

HALGREN TESTS
873 PERSIMMON AVE
SUNNYVALE CALIFORNIA 94087

INSTRUCTIONS

On the next page are 18 values listed in alphabetical order. Your task is to arrange them in order of their importance to YOU, as guiding principles in YOUR life. Each value is printed on a gummed label which can be easily peeled off and pasted in the boxes on the left-hand side of the page.

Study the list carefully and pick out the one value which is the most important for you. Peel it off and paste it in Box 1 on the left.

Then pick out the value which is second most important for you. Peel it off and paste it in Box 2. Then do the same for each of the remaining values. The value which is least important goes in Box 18.

Work slowly and think carefully. If you change your mind, feel free to change your answers. The labels peel off easily and can be moved from place to place. The end result should truly show how you really feel.

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	

A COMFORTABLE LIFE
(a prosperous life)

AN EXCITING LIFE
(a stimulating, active life)

A SENSE OF ACCOMPLISHMENT
(lasting contribution)

A WORLD AT PEACE
(free of war and conflict)

A WORLD OF BEAUTY
(beauty of nature and the arts)

EQUALITY (brotherhood, equal opportunity for all)

FAMILY SECURITY
(taking care of loved ones)

FREEDOM
(independence, free choice)

HAPPINESS
(contentedness)

INNER HARMONY
(freedom from inner conflict)

MATURE LOVE
(sexual and spiritual intimacy)

NATIONAL SECURITY
(protection from attack)

PLEASURE
(an enjoyable, leisurely life)

SALVATION
(saved, eternal life)

SELF-RESPECT
(self-esteem)

SOCIAL RECOGNITION
(respect, admiration)

TRUE FRIENDSHIP
(close companionship)

WISDOM
(a mature understanding of life)

WHEN YOU HAVE FINISHED, GO TO THE NEXT PAGE.

Below is another list of 18 values. Arrange them in order of importance, the same as before.

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	

AMBITIOUS
(hard-working, aspiring)

BROADMINDED
(open-minded)

CAPABLE
(competent, effective)

CHEERFUL
(lighthearted, joyful)

CLEAN
(neat, tidy)

COURAGEOUS
(standing up for your beliefs)

FORGIVING
(willing to pardon others)

HELPFUL (working for the welfare of others)

HONEST
(sincere, truthful)

IMAGINATIVE
(daring, creative)

INDEPENDENT
(self-reliant, self-sufficient)

INTELLECTUAL
(intelligent, reflective)

LOGICAL
(consistent, rational)

LOVING
(affectionate, tender)

OBEDIENT
(dutiful, respectful)

POLITE
(courteous, well-mannered)

RESPONSIBLE
(dependable, reliable)

SELF-CONTROLLED
(restrained, self-disciplined)

APPENDIX C

SUM OF RANKS ASSIGNED TO TERMINAL AND INSTRUMENTAL VALUES FOR SURVEY RESPONDENTS BY GNS SCORES

TABLE 23

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR 51 GNS SCORE 7 SURVEY RESPONDENTS

Value	Sum of Ranks R_j	$\left[R_j - \frac{\Sigma R_j}{N}\right]^2$
A Comfortable Life	440	2601
An Exciting Life	465	5776
A Sense of Accomplishment	275	12996
A World at Peace	334	3025
A World of Beauty	506	13689
Equality	462	5328
Family Security	177	44944
Freedom	281	11664
Happiness	351	1444
Inner Happiness	407	324
Mature Love	453	4096
National Security	421	1024
Pleasure	549	25600
Salvation	351	1444
Self-Respect	301	7744
Social Recognition	491	10404
True Friendship	437	2304
Wisdom	306	6889
	$\Sigma R_j = 7007$	$S = 16129.7$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = \frac{7007}{18} = 389$$

TABLE 24

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR 41 GNS SCORE 6 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
A Comfortable Life	312
An Exciting Life	471
A Sense of Accomplishment	328
A World at Peace	404
A World of Beauty	594
Equality	484
Family Security	151
Freedom	253
Happiness	301
Inner Happiness	432
Mature Love	412
National Security	415
Pleasure	504
Salvation	397
Self-Respect	287
Social Recognition	541
True Friendship	437
Wisdom	284
	$\Sigma R_j = 7007$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = 389$$

TABLE 25

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR 18 GNS SCORE 5 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
A Comfortable Life	143
An Exciting Life	254
A Sense of Accomplishment	153
A World at Peace	150
A World of Beauty	254
Equality	209
Family Security	59
Freedom	139
Happiness	106
Inner Happiness	141
Mature Love	184
National Security	184
Pleasure	215
Salvation	201
Self-Respect	106
Social Recognition	250
True Friendship	182
Wisdom	160
	$\Sigma R_j = 3090$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = 171$$

TABLE 26

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR 10 GNS SCORE 4 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
A Comfortable Life	66
An Exciting Life	99
A Sense of Accomplishment	108
A World at Peace	61
A World of Beauty	134
Equality	101
Family Security	43
Freedom	76
Happiness	75
Inner Happiness	118
Mature Love	125
National Security	70
Pleasure	97
Salvation	119
Self-Respect	84
Social Recognition	139
True Friendship	110
Wisdom	79
	$\Sigma R_j = 1704$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = 94$$

TABLE 27

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR 3 GNS SCORE 3 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
A Comfortable Life	9
An Exciting Life	37
A Sense of Accomplishment	18
A World at Peace	44
A World of Beauty	43
Equality	31
Family Security	4
Freedom	33
Happiness	27
Inner Happiness	32
Mature Love	42
National Security	44
Pleasure	22
Salvation	42
Self-Respect	17
Social Recognition	39
True Friendship	17
Wisdom	12
	$\Sigma R_j = 513$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = 28$$

TABLE 28

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR 51 GNS SCORE 7 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
Ambitious	319
Broadminded	350
Capable	344
Cheerful	420
Clean	429
Courageous	394
Forgiving	353
Helpful	431
Honest	176
Imaginative	480
Independent	408
Intellectual	495
Logical	470
Loving	481
Obedient	481
Polite	464
Responsible	194
Self-Controlled	398
	$\Sigma R_j = 7087$

$$\text{Mean of } R_j = \frac{\Sigma R_j}{N} = 393$$

TABLE 29

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR 41 GNS SCORE 6 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
Ambitious	256
Broadminded	312
Capable	218
Cheerful	529
Clean	427
Courageous	423
Forgiving	457
Helpful	369
Honest	149
Imaginative	479
Independent	388
Intellectual	462
Logical	392
Loving	532
Obedient	545
Polite	462
Responsible	160
Self-Controlled	410
	$\Sigma R_j = 6970$

$$\text{Mean of } R_j = \frac{\Sigma R_j}{N} = 387$$

TABLE 30

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR 18 GNS SCORE 5 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
Ambitious	139
Broadminded	152
Capable	126
Cheerful	189
Clean	152
Courageous	158
Forgiving	170
Helpful	154
Honest	57
Imaginative	240
Independent	238
Intellectual	259
Logical	212
Loving	186
Obedient	216
Polite	160
Responsible	100
Self-Controlled	171
	$\Sigma R_j = 3079$

$$\text{Mean of } R_j = \frac{\Sigma R_j}{N} = 171$$

TABLE 31

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR 10 GNS SCORE 4 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
Ambitious	64
Broadminded	87
Capable	69
Cheerful	115
Clean	84
Courageous	85
Forgiving	94
Helpful	67
Honest	33
Imaginative	136
Independent	115
Intellectual	145
Logical	148
Loving	119
Obedient	120
Polite	80
Responsible	42
Self-Controlled	102
	$\Sigma R_j = 1705$

$$\text{Mean of } R_j = \frac{\Sigma R_j}{N} = 94$$

TABLE 32

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR 3 GNS SCORE 3 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
Ambitious	15
Broadminded	6
Capable	15
Cheerful	24
Clean	16
Courageous	31
Forgiving	35
Helpful	38
Honest	17
Imaginative	42
Independent	15
Intellectual	30
Logical	21
Loving	45
Obedient	48
Polite	51
Responsible	40
Self-Controlled	24
	$\Sigma R_j = 513$

$$\text{Mean of } R_j = \frac{\Sigma R_j}{N} = 28$$

APPENDIX D

SUM OF RANKS ASSIGNED TO TERMINAL AND INSTRUMENTAL VALUES FOR GNS SCORES OF SURVEY RESPONDENTS BY STRATA

TABLE 33

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR GNS SCORE 7 SURVEY RESPONDENTS BY STRATA

Value	Sum of Ranks R_j		
	Strata		
	S1	S2	S2
A Comfortable Life	67	51	106
An Exciting Life	73	54	145
A Sense of Accomplishment	44	39	64
A World at Peace	47	48	96
A World of Beauty	67	84	156
Equality	42	70	123
Family Security	24	33	54
Freedom	41	37	101
Happiness	42	39	109
Inner Happiness	39	60	112
Mature Love	51	74	126
National Security	54	78	110
Pleasure	67	83	166
Salvation	20	44	110
Self-Respect	32	41	102
Social Recognition	63	83	141
True Friendship	46	49	141
Wisdom	36	59	91
K =	5	6	17

TABLE 33--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
A Comfortable Life	64	57	95
An Exciting Life	63	48	82
A Sense of Accomplishment	42	25	61
A World at Peace	43	53	47
A World of Beauty	66	28	105
Equality	61	65	101
Family Security	22	11	33
Freedom	21	30	51
Happiness	31	63	67
Inner Happiness	49	75	72
Mature Love	33	84	85
National Security	61	35	83
Pleasure	77	98	118
Salvation	9	14	94
Self-Respect	45	13	48
Social Recognition	82	8	114
True Friendship	51	84	66
Wisdom	34	40	46
K =	5	10	8

TABLE 34

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR GNS SCORE 6 SURVEY RESPONDENTS BY STRATA

Value	Sum of Ranks R_j Strata S1	S2	S3
A Comfortable Life	42	36	71
An Exciting Life	39	54	151
A Sense of Accomplishment	13	50	101
A World at Peace	56	54	119
A World of Beauty	66	96	173
Equality	56	70	151
Family Security	14	34	33
Freedom	40	30	73
Happiness	27	59	84
Inner Happiness	40	58	144
Mature Love	35	64	124
National Security	50	46	105
Pleasure	52	69	123
Salvation	49	66	140
Self-Respect	17	38	79
Social Recognition	23	81	163
True Friendship	32	67	137
Wisdom	33	49	80
K =	4	6	12

TABLE 34--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
A Comfortable Life	64	45	53
An Exciting Life	90	65	72
A Sense of Accomplishment	72	40	52
A World at Peace	92	46	37
A World of Beauty	120	62	77
Equality	113	53	41
Family Security	31	13	26
Freedom	46	38	26
Happiness	68	24	39
Inner Happiness	84	49	57
Mature Love	98	47	44
National Security	83	70	61
Pleasure	123	68	69
Salvation	94	24	24
Self-Respect	61	55	37
Social Recognition	136	75	63
True Friendship	96	54	51
Wisdom	68	28	26
K =	9	5	5

TABLE 35

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR GNS SCORE 5 SURVEY RESPONDENTS BY STRATA

Value	Sum of Ranks R_j Strata S1	S2	S3
A Comfortable Life	17	27	57
An Exciting Life	46	47	77
A Sense of Accomplishment	16	32	48
A World of Peace	34	11	60
A World of Beauty	41	32	85
Equality	43	33	82
Family Security	7	18	12
Freedom	24	14	47
Happiness	15	12	38
Inner Happiness	17	20	49
Mature Love	37	33	63
National Security	34	28	47
Pleasure	38	30	68
Salvation	37	47	65
Self-Respect	11	26	28
Social Recognition	37	45	93
True Friendship	27	35	57
Wisdom	32	33	50
K =	3	3	6

TABLE 35--Continued

Value	Sum of Ranks R_j Strata S5	S6
A Comfortable Life	26	16
An Exciting Life	33	49
A Sense of Accomplishment	21	36
A World at Peace	11	34
A World of Beauty	29	67
Equality	17	34
Family Security	10	12
Freedom	14	40
Happiness	15	26
Inner Happiness	13	42
Mature Love	13	38
National Security	16	59
Pleasure	34	45
Salvation	2	50
Self-Respect	15	26
Social Recognition	35	40
True Friendship	27	36
Wisdom	11	34
K =	2	4

TABLE 36

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR SIX GNS SCORE 4 SURVEY RESPONDENTS IN STRATUM FIVE AND FOUR SURVEY RESPONDENTS IN THREE OTHER STRATA

	Sum of Ranks R_j	
Value	Stratum 5	Three Strata Combined
A Comfortable Life	31	35
An Exciting Life	52	47
A Sense of Accomplishment	57	51
A World at Peace	38	23
A World of Beauty	75	59
Equality	66	35
Family Security	27	16
Freedom	49	27
Happiness	53	22
Inner Happiness	77	41
Mature Love	71	54
National Security	42	28
Pleasure	51	46
Salvation	70	49
Self-Respect	51	33
Social Recognition	81	58
True Friendship	69	41
Wisdom	66	13
K =	6	4

TABLE 37

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR GNS SCORE 7 SURVEY RESPONDENTS BY STRATA

	Sum of Ranks R_j		
	Strata		
Value	S1	S2	S3
Ambitious	40	47	65
Broadminded	36	51	115
Capable	32	52	56
Cheerful	58	69	111
Clean	69	69	100
Courageous	42	50	112
Forgiving	59	46	136
Helpful	48	60	123
Honest	12	37	47
Imaginative	63	79	141
Independent	38	59	128
Intellectual	64	81	135
Logical	45	55	143
Loving	55	59	167
Obedient	62	63	165
Polite	69	74	129
Responsible	23	26	85
Self-Controlled	40	49	103
K =	5	6	17

TABLE 37--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
Ambitious	34	63	68
Broadminded	41	24	83
Capable	44	93	67
Cheerful	78	24	80
Clean	59	56	76
Courageous	47	66	77
Forgiving	37	14	61
Helpful	42	82	76
Honest	14	32	34
Imaginative	70	47	80
Independent	43	66	74
Intellectual	57	76	82
Logical	36	83	108
Loving	53	54	93
Obedient	64	17	110
Polite	67	35	90
Responsible	17	4	39
Self-Controlled	51	75	80
K =	5	10	8

TABLE 38

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR GNS SCORE 6 SURVEY RESPONDENTS BY STRATA

	Sum of Ranks R_j		
	Strata		
Value	S1	S2	S3
Ambitious	26	34	57
Broadminded	39	35	120
Capable	23	25	54
Cheerful	59	81	152
Clean	58	91	110
Courageous	29	51	135
Forgiving	44	62	157
Helpful	25	46	128
Honest	8	20	51
Imaginative	49	57	146
Independent	39	65	83
Intellectual	49	67	136
Logical	34	57	114
Loving	58	85	172
Obedient	49	84	161
Polite	46	82	123
Responsible	6	20	27
Self-Controlled	43	67	126
K =	4	6	12

TABLE 38--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
Ambitious	51	65	23
Broadminded	81	37	43
Capable	57	24	35
Cheerful	102	54	81
Clean	93	34	41
Courageous	100	56	52
Forgiving	94	45	55
Helpful	86	32	52
Honest	38	23	9
Imaginative	94	62	71
Independent	85	62	54
Intellectual	90	79	41
Logical	90	39	58
Loving	109	40	68
Obedient	116	63	72
Polite	99	65	47
Responsible	56	34	17
Self-Controlled	98	40	36
K =	9	5	5

TABLE 39

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR GNS SCORE 5 SURVEY RESPONDENTS BY STRATA

	Sum of Ranks R_j		
	Strata		
Value	S1	S2	S3
Ambitious	22	34	42
Broadminded	21	22	52
Capable	24	16	40
Cheerful	30	19	61
Clean	37	24	52
Courageous	31	29	69
Forgiving	33	24	59
Helpful	29	25	62
Honest	3	5	24
Imaginative	42	39	69
Independent	34	44	87
Intellectual	38	46	87
Logical	39	34	60
Loving	25	39	71
Obedient	37	46	59
Polite	28	18	49
Responsible	12	16	32
Self-Controlled	28	33	51
K =	3	3	6

TABLE 39--Continued

Value	Sum of Ranks R_j Strata S5	S6
Ambitious	19	22
Broadminded	22	35
Capable	19	27
Cheerful	22	56
Clean	10	29
Courageous	5	24
Forgiving	12	42
Helpful	7	31
Honest	2	23
Imaginiative	32	58
Independent	33	40
Intellectual	34	54
Logical	33	46
Loving	14	37
Obedient	21	53
Polite	24	41
Responsible	21	19
Self-Controlled	12	47
K =	2	4

TABLE 40

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR SIX GNS SCORE 4 SURVEY RESPONDENTS IN STRATUM FIVE AND FOUR SURVEY RESPONDENTS IN THREE OTHER STRATA

	Sum of Ranks R_j	
Value	Stratum 5	Three Strata Combined
Ambitious	42	22
Broadminded	51	36
Capable	47	22
Cheerful	78	37
Clean	47	37
Courageous	59	26
Forgiving	65	29
Helpful	46	21
Honest	20	13
Imaginative	79	57
Independent	65	50
Intellectual	90	55
Logical	89	59
Loving	56	63
Obedient	63	57
Polite	49	31
Responsible	22	20
Self-Controlled	58	44
K =	6	4

APPENDIX E

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS
FOR TERMINAL AND INSTRUMENTAL VALUES
BY GNS SCORES AND STRATA

TABLE 41

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS FOR TERMINAL HUMAN VALUES BY GNS SCORES AND STRATA

	Strata					
GNS Score 7	S1	S2	S3	S4	S5	S6
S	3961	5232	14503	6854	12761	10946
W	0.327	0.300	0.103	0.565	0.263	0.353
Chi Square	27.77	30.57	29.91	48.06	47.74	47.97
P<	0.050	0.025	0.050	0.001	0.001	0.001
K	5	6	17	5	10	8
GNS Score 6						
S	3976	4965	24569	12664	5166	4799
W	0.512	0.284	0.352	0.322	0.426	0.396
Chi Square	34.85	29.01	71.77	49.33	36.22	33.65
P<	0.010	0.050	0.001	0.005	0.005	0.010
K	5	6	12	9	5	5
GNS Score 5						
S	2451	2061	6956	-	1534	3124
W	0.562	0.472	0.398	-	0.791	0.403
Chi Square	28.64	24.08	27.10	-	26.89	27.38
P<	0.050	0.250	0.100	-	0.100	0.100
K	3	3	6	-	2	4
GNS Score 4						
S	-	-	-	-	4310	-
W	-	-	-	-	.247	-
Chi Square	-	-	-	-	25.18	-
P<	-	-	-	-	0.10	-
K	-	-	-	-	6	-

TABLE 42

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS FOR INSTRUMENTAL HUMAN VALUES BY GNS SCORES AND STRATA

	Strata					
GNS Score 7	S1	S2	S3	S4	S5	S6
S	4423	3450	19833	4940	12407	6306
W	0.365	0.198	0.142	0.407	0.256	0.203
Chi Square	31.01	20.16	40.90	34.64	43.49	27.64
P<	0.025	0.300	0.001	0.010	0.001	0.050
K	5	6	17	5	10	8
GNS Score 6						
S	4290	9091	30636	7699	4442	6355
W	0.553	0.284	0.439	0.196	0.366	0.524
Chi Square	37.60	29.01	89.50	29.99	31.14	44.56
P<	0.010	0.050	0.001	0.050	0.025	0.001
K	4	6	12	9	5	5
GNS Score 5						
S	1645	2319	4720	-	1760	2678
W	0.377	0.531	0.270	-	0.861	0.345
Chi Square	19.22	27.10	27.58		29.27	23.47
P<	0.350	0.100	0.100		0.050	0.250
K	3	3	6		2	4
GNS Score 4						
S	-	-	-	-	6448	-
W	-	-	-	-	.369	-
Chi Square	-	-	-	-	37.67	-
P<	-	-	-	-	6	-
K	-	-	-	-		-

APPENDIX F

SUM OF RANKS ASSIGNED TO TERMINAL AND INSTRUMENTAL VALUES FOR SURVEY RESPONDENTS BY MPS GROUPINGS

TABLE 43

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR 28 MPS GROUPING 1 SURVEY RESPONDENTS

Value	Sum of Ranks R_j	$\left[R_j - \frac{\Sigma R_j}{N}\right]^2$
A Comfortable Life	216	2500
An Exciting Life	311	2025
A Sense of Accomplishment	338	784
A World of Peace	222	1936
A World of Beauty	370	10816
Equality	298	1024
Family Security	89	31329
Freedom	214	2704
Happiness	220	2116
Inner Happiness	276	100
Mature Love	302	1296
National Security	304	1444
Pleasure	357	8281
Salvation	307	1681
Self-Respect	167	9801
Social Recognition	167	9801
True Friendship	282	256
Wisdom	247	361
	$\Sigma R_j = 4792$	$S = 89690$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = \frac{4792}{18} = 266$$

TABLE 44

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR 68 MPS GROUPING 2 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
A Comfortable Life	609
An Exciting Life	857
A Sense of Accomplishment	564
A World at Peace	623
A World of Beauty	970
Equality	756
Family Security	302
Freedom	468
Happiness	455
Inner Happiness	608
Mature Love	696
National Security	665
Pleasure	845
Salvation	575
Self-Respect	516
Social Recognition	932
True Friendship	678
Wisdom	488
	$\Sigma R_j = 11607$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = 644$$

TABLE 45

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR 27 MPS GROUPING 3 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
A Comfortable Life	252
An Exciting Life	297
A Sense of Accomplishment	199
A World at Peace	205
A World of Beauty	380
Equality	285
Family Security	98
Freedom	151
Happiness	247
Inner Happiness	314
Mature Love	299
National Security	260
Pleasure	372
Salvation	252
Self-Respect	183
Social Recognition	368
True Friendship	285
Wisdom	171
	$\Sigma R_j = 4618$

$$\text{Mean } R_j = \frac{\Sigma R_j}{N} = 256$$

TABLE 46

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VLAUES FOR 28 MPS GROUPING 1 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
Ambitious	158
Broadminded	211
Capable	203
Cheerful	341
Clean	294
Courageous	229
Forgiving	285
Hlepful	245
Honest	116
Imaginative	363
Independent	261
Intellectual	349
Logical	328
Loving	295
Obedient	357
Polite	310
Responsible	185
Self-Controlled	259
	$\Sigma R_j = 4789$

$$\text{Mean of } R_j = \frac{\Sigma R_j}{N} = 266$$

TABLE 47

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR 68 MPS GROUPING 2 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
Ambitious	450
Broadminded	555
Capable	390
Cheerful	658
Clean	571
Courageous	624
Forgiving	561
Helpful	535
Honest	195
Imaginative	760
Independent	662
Intellectual	750
Logical	630
Loving	694
Obedient	719
Polite	637
Responsible	303
Self-Controlled	579
	$\Sigma R_j = 10273$

$$\text{Mean of } R_j = \frac{\Sigma R_j}{N} = 570$$

TABLE 48

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR 27 MPS GROUPING 3 SURVEY RESPONDENTS

Value	Sum of Ranks R_j
Ambitious	140
Broadminded	260
Capable	159
Cheerful	312
Clean	248
Courageous	243
Forgiving	334
Helpful	255
Honest	124
Imaginative	313
Independent	237
Intellectual	260
Logical	286
Loving	380
Obedient	391
Polite	306
Responsible	125
Self-Controlled	239
	$\Sigma R_j = 4612$

$$\text{Mean of } R_j = \frac{\Sigma R_j}{N} = 256$$

APPENDIX G

SUM OF RANKS ASSIGNED TO TERMINAL AND INSTRUMENTAL VALUES FOR MPS GROUPINGS OF SURVEY RESPONDENTS BY STRATA

TABLE 49

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR MPS GROUPING 1 SURVEY RESPONDENTS BY STRATA

Value	Sum of Ranks R_j Strata S1	S2	S3
A Comfortable Life	22	5	78
An Exciting Life	64	12	101
A Sense of Accomplishment	24	24	62
A World at Peace	45	13	64
A World of Beauty	50	23	98
Equality	49	24	89
Family Security	11	7	19
Freedom	41	8	62
Happiness	30	10	66
Inner Happiness	31	19	76
Mature Love	50	30	81
National Security	44	25	82
Pleasure	54	26	108
Salvation	39	33	83
Self-Respect	12	14	45
Social Recognition	44	28	113
True Friendship	39	17	80
Wisdom	35	24	72
K =	4	2	8

TABLE 49--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
A Comfortable Life	29	40	42
An Exciting Life	31	38	65
A Sense of Accomplishment	25	50	53
A World at Peace	23	28	49
A World of Beauty	41	57	101
Equality	35	59	42
Family Security	5	29	18
Freedom	23	31	49
Happiness	28	46	40
Inner Happiness	28	54	68
Mature Love	25	50	66
National Security	32	45	76
Pleasure	43	51	75
Salvation	22	59	71
Self-Respect	19	35	42
Social Recognition	52	66	69
True Friendship	34	61	61
Wisdom	19	58	39
K =	3	5	6

TABLE 50

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR MPS GROUPING 2 SURVEY RESPONDENTS BY STRATA

Value	Sum of Ranks R_j Strata S1	S2	S3
A Comfortable Life	77	83	150
An Exciting Life	59	128	264
A Sense of Accomplishment	30	74	154
A World at Peace	72	83	187
A World of Beauty	89	139	299
Equality	70	106	229
Family Security	30	56	76
Freedom	57	64	135
Happiness	39	65	134
Inner Happiness	48	81	203
Mature Love	50	109	212
National Security	73	96	165
Pleasure	74	114	237
Salvation	65	92	173
Self-Respect	32	67	154
Social Recognition	53	143	286
True Friendship	52	112	224
Wisdom	56	96	137
K =	6	10	20

TABLE 50--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
A Comfortable Life	78	129	92
An Exciting Life	107	190	109
A Sense of Accomplishment	89	128	89
A World at Peace	108	110	63
A World of Beauty	134	183	126
Equality	124	123	104
Family Security	42	46	52
Freedom	56	98	58
Happiness	65	87	65
Inner Happiness	82	110	84
Mature Love	115	123	87
National Security	90	139	102
Pleasure	114	181	125
Salvation	101	67	77
Self-Respect	81	121	61
Social Recognition	142	189	119
True Friendship	100	120	70
Wisdom	73	70	56
K =	10	13	9

TABLE 51

SUM OF RANKS ASSIGNED TO TERMINAL VALUES FOR MPS GROUPING 3 SURVEY RESPONDENTS BY STRATA

Value	Sum of Ranks R_j Strata S1	S2	S3
A Comfortable life	27	26	70
An Exciting Life	35	15	97
A Sense of Accomplishment	19	23	71
A World at Peace	20	22	78
A World of Beauty	35	48	115
Equality	22	33	102
Family Security	4	22	24
Freedom	7	9	62
Happiness	15	35	84
Inner Happiness	17	38	95
Mature Love	23	32	106
National Security	21	31	84
Pleasure	29	42	109
Salvation	2	32	93
Self-Respect	16	24	60
Social Recognition	26	38	112
True Friendship	14	22	107
Wisdom	10	21	71
K =	2	3	9

TABLE 51--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
A Comfortable Life	24	51	54
An Exciting Life	19	72	59
A Sense of Accomplishment	17	34	35
A World at Peace	16	37	32
A World of Beauty	21	89	72
Equality	27	47	54
Family Security	7	30	11
Freedom	7	34	32
Happiness	19	48	46
Inner Happiness	26	85	53
Mature Love	9	79	50
National Security	29	47	48
Pleasure	35	87	70
Salvation	4	49	72
Self-Respect	19	37	27
Social Recognition	32	96	64
True Friendship	18	74	50
Wisdom	13	30	26
K =	2	6	5

TABLE 52

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR MPS GROUPING 1 SURVEY RESPONDENTS BY STRATA

	Sum of Ranks R_j		
	Strata		
Value	S1	S2	S3
Ambitious	26	17	32
Broadminded	23	4	62
Capable	27	25	59
Cheerful	45	28	85
Clean	55	36	91
Courageous	39	8	78
Forgiving	49	13	93
Helpful	40	15	81
Honest	9	9	27
Imaginative	55	19	105
Independent	43	13	63
Intellectual	48	20	95
Logical	51	13	95
Loving	42	23	84
Obedient	44	26	101
Polite	42	29	101
Responsible	13	16	58
Self-Controlled	33	29	58
K =	4	2	8

TABLE 52--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
Ambitious	15	35	33
Broadminded	36	43	43
Capable	23	34	35
Cheerful	45	58	80
Clean	29	46	37
Courageous	26	36	42
Forgiving	24	50	56
Helpful	28	42	39
Honest	15	23	33
Imaginative	28	75	81
Independent	21	58	63
Intellectual	27	71	88
Logical	37	64	68
Loving	30	43	73
Obedient	43	56	87
Polite	32	39	67
Responsible	21	30	47
Self-Controlled	33	52	54
K =	3	5	6

TABLE 53

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR MPS GROUPING 2 SURVEY RESPONDENTS BY STRATA

	Sum of Ranks R_j		
	Strata		
Value	S1	S2	S3
Ambitious	53	58	101
Broadminded	53	86	198
Capable	42	55	98
Cheerful	74	104	200
Clean	93	115	155
Courageous	41	109	224
Forgiving	60	92	213
Helpful	40	89	203
Honest	11	35	86
Imaginative	73	119	251
Independent	57	103	224
Intellectual	76	111	266
Logical	55	87	219
Loving	63	132	265
Obedient	73	108	237
Polite	78	110	175
Responsible	19	47	102
Self-Controlled	65	102	213
K =	6	10	20

TABLE 53--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
Ambitious	59	138	74
Broadminded	87	103	92
Capable	57	103	79
Cheerful	107	137	118
Clean	119	107	86
Courageous	111	133	100
Forgiving	94	94	71
Helpful	90	87	88
Honest	37	41	18
Imaginative	121	177	111
Independent	106	169	88
Intellectual	114	174	95
Logical	89	144	110
Loving	135	107	96
Obedient	111	151	123
Polite	114	149	94
Responsible	49	99	29
Self-Controlled	105	109	77
K =	10	13	9

TABLE 54

SUM OF RANKS ASSIGNED TO INSTRUMENTAL VALUES FOR MPS GROUPING 3 SURVEY RESPONDENTS BY STRATA

Value	Sum of Ranks R_j Strata S1	S2	S3
Ambitious	9	8	73
Broadminded	20	30	94
Capable	10	12	44
Cheerful	28	42	103
Clean	16	41	85
Courageous	22	26	85
Forgiving	27	32	116
Helpful	22	35	92
Honest	3	19	31
Imaginative	26	32	101
Independent	11	16	78
Intellectual	27	31	78
Logical	12	34	101
Loving	33	36	134
Obedient	31	36	134
Polite	23	35	99
Responsible	9	11	26
Self-Controlled	13	38	64
K =	2	3	9

TABLE 54--Continued

Value	Sum of Ranks R_j Strata S4	S5	S6
Ambitious	12	18	20
Broadminded	11	59	46
Capable	23	40	30
Cheerful	31	54	54
Clean	17	46	43
Courageous	19	57	34
Forgiving	17	79	63
Helpful	15	42	49
Honest	6	36	29
Imaginative	26	72	56
Independent	13	67	52
Intellectual	21	62	41
Logical	16	60	63
Loving	15	91	71
Obedient	36	81	73
Polite	27	69	53
Responsible	11	42	26
Self-Controlled	25	47	52
K =	2	6	5

APPENDIX H

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS
FOR TERMINAL AND INSTRUMENTAL VALUES
BY MPS GROUPINGS AND STRATA

TABLE 55

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS FOR TERMINAL HUMAN VALUES BY MPS GROUPINGS AND STRATA

	Strata					
MPS Grouping 1	S1	S2	S3	S4	S5	S6
S	3452	1230	8663	1876	2189	6196
W	0.445	0.634	0.279	0.430	0.181	0.355
Chi Square	30.25	21.56	37.96	21.92	15.34	36.20
P<	0.050	0.300	0.010	0.300	0.700	0.010
K	4	2	8	3	5	6
MPS Grouping 2						
S	5010	11412	59209	12135	30272	10141
W	0.278	0.235	0.305	0.250	0.369	0.258
Chi Square	29.27	40.00	103.78	42.50	81.63	39.50
P<	0.050	0.010	0.001	0.001	0.001	0.010
K	6	10	20	10	13	9
MPS Grouping 3						
S	1548	1643	9270	1330	8924	5097
W	0.798	0.376	0.236	0.686	0.511	0.420
Chi Square	27.13	19.20	36.11	23.31	52.14	35.73
P<	0.100	0.500	0.010	0.200	0.001	0.010
K	2	3	9	2	6	5

TABLE 56

SUMMARY OF KENDALL COEFFICIENT OF CONCORDANCE STATISTICS FOR INSTRUMENTAL HUMAN VALUES BY MPS GROUPINGS AND STRATA

	Strata					
MPS Grouping 1	S1	S2	S3	S4	S5	S6
S	3096	1255	9140	1187	3427	6370
W	0.399	0.647	0.294	0.272	0.283	0.365
Chi Square	27.13	22.00	40.05	13.87	24.03	37.22
P<	0.10	0.20	0.010	0.70	0.20	0.010
K	4	2	8	3	5	6
MPS Grouping 2						
S	7374	1246	58177	12805	21000	12451
W	0.422	0.642	0.300	0.264	0.256	0.317
Chi Square	43.08	21.83	101.97	44.88	56.63	48.50
P<	0.001	0.200	0.001	0.001	0.001	0.001
K	6	10	20	10	13	9
MPS Grouping 3						
S	1328	1946	15686	1330	5664	3989
W	0.685	0.446	0.399	0.686	0.324	0.329
Chi Square	23.27	22.74	61.10	23.31	33.10	27.97
P<	0.200	0.200	0.001	0.200	0.020	0.050
K	2	3	9	2	6	5

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APPENDIX I

TERMINAL AND INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS BY GNS SCORES AND STRATA

LEGEND FOR APPENDIX I

1. All Figures which are not enclosed in parehtheses are medians of the respective values.

2. All figures in parentheses reflect the rank orders of the respective values.

3. Strata are denoted as follows:

   S1 = Top Management Stratum

   S2 = Middle Management Stratum

   S3 = 1st Lower Management Stratum in O&M

   S4 = 1st Lower Management Stratum excluding O&M

   S5 = Rank and File Stratum in O&M

   S6 = General Office Workers Stratum

4. K = Number of cases in the strata.

TABLE 57

TERMINAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR GNS SCORE 7 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata S1		Strata S2		Strata S3	
A Comfortable Life	16.00	(17)	5.50	(5.5)	9.00	(9)
An Exciting Life	17.00	(18)	7.50	(7.5)	11.13	(14)
A Sense of Accomplishment	8.00	(6.5)	8.00	(9.5)	6.00	(3)
A World at Peace	11.00	(12)	8.00	(9.5)	7.00	(6)
A World of Beauty	15.00	(15.5)	13.50	(16.5)	15.75	(18)
Equality	10.00	(10)	10.50	(13)	10.25	(12)
Family Security	3.75	(2)	2.50	(1.5)	3.00	(1)
Freedom	8.00	(6.5)	5.50	(5.5)	6.33	(4)
Happiness	10.00	(10)	3.50	(3)	8.25	(8)
Inner Happiness	6.25	(3)	9.50	(12)	9.38	(10)
Mature Love	12.00	(13)	11.50	(14)	10.33	(13)
National Security	10.00	(10)	14.50	(18)	10.00	(11)
Pleasure	15.00	(15.5)	12.50	(15)	15.25	(17)
Salvation	1.33	(1)	2.50	(1.5)	5.13	(2)
Self-Respect	7.75	(5)	4.50	(4)	6.88	(5)
Social Recognition	13.25	(14)	13.50	(16.5)	13.75	(16)
True Friendship	9.00	(8)	7.50	(7.5)	12.25	(15)
Wisdom	7.00	(4)	9.00	(11)	7.63	(7)
K =	5		6		17	

TABLE 57--Continued

Value	Strata S4		S5		S6	
A Comfortable Life	16.67	(17)	10.50	(14)	13.50	(15)
An Exciting Life	14.00	(14.5)	13.50	(15)	9.50	(11.5)
A Sense of Accomplishment	8.25	(7)	7.50	(7.5)	6.50	(5.5)
A World of Peace	9.00	(9)	6.50	(6.5)	4.50	(2)
A World of Beauty	14.00	(14.5)	16.00	(16)	14.50	(16.5)
Equality	12.25	(13)	4.50	(2.5)	13.00	(14)
Family Security	4.00	(3.5)	4.17	(1)	2.50	(1)
Freedom	4.00	(3.5)	5.50	(4.5)	5.50	(3.5)
Happiness	5.25	(5)	7.50	(8.5)	7.50	(7)
Inner Happiness	12.67	(14)	8.50	(10)	8.50	(9)
Mature Love	6.00	(6)	9.50	(12)	8.50	(9)
National Security	11.00	(12)	9.50	(12)	9.50	(11.5)
Pleasure	17.00	(18)	16.25	(17)	15.50	(18)
Salvation	1.33	(1)	6.50	(6.5)	14.50	(16.5)
Self-Respect	10.00	(10.5)	5.50	(4.5)	6.50	(5.5)
Social Recognition	16.13	(16)	16.83	(18)	12.50	(13)
True Friendship	10.00	(10.5)	9.50	(12)	8.50	(9)
Wisdom	3.00	(2)	4.50	(2.5)	5.50	(3.5)
K =	5		10		8	

TABLE 58

TERMINAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR GNS SCORE 6 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata S1		Strata S2		Strata S3	
A Comfortable Life	10.50	(11.5)	4.50	(2)	5.17	(3)
An Exciting Life	6.50	(7.5)	8.50	(8.5)	14.50	(16)
A Sense of Accomplishment	1.50	(1)	6.17	(5)	8.50	(8.5)
A World at Peace	13.50	(15)	10.50	(11.5)	8.50	(8.5)
A World of Beauty	15.50	(17.5)	16.50	(18)	15.00	(17)
Equality	14.00	(16)	11.50	(13)	12.50	(14.5)
Family Security	2.50	(2.5)	4.50	(2)	2.17	(1)
Freedom	11.00	(13)	4.50	(2)	4.50	(2)
Happiness	5.50	(5)	8.50	(8.5)	5.50	(4.5)
Inner Happiness	7.50	(9)	9.50	(10)	11.50	(12.5)
Mature Love	9.50	(10)	12.0	(14)	10.00	(10)
National Security	12.50	(14)	7.50	(6.5)	7.50	(7)
Pleasure	10.50	(11.5)	13.83	(16)	10.50	(11)
Salvation	15.50	(17.5)	15.50	(17)	12.50	(14.5)
Self-Respect	2.50	(2.5)	5.50	(4)	5.50	(4.5)
Social Recognition	5.50	(5)	13.50	(15)	16.50	(18)
True Friendship	5.50	(5)	10.50	(11.5)	11.50	(12.5)
Wisdom	6.50	(7.5)	7.50	(6.5)	6.17	(6)
K =	4		6		12	

TABLE 58--Continued

Value	Strata S4		S5		S6	
A Comfortable Life	6.75	(5)	8.00	(6)	11.00	(12.5)
An Exciting Life	12.67	(13)	14.00	(15.5)	15.00	(16)
A Sense of Accomplishment	9.75	(9)	6.00	(4)	10.00	(10.5)
A World at Peace	9.25	(8)	10.00	(10.5)	3.00	(2)
A World of Beauty	13.00	(15)	12.00	(14)	16.00	(18)
Equality	13.00	(15)	10.00	(10.5)	7.00	(6.5)
Family Security	2.13	(1)	2.33	(2)	4.00	(4)
Freedom	5.00	(2)	9.00	(8)	3.25	(3)
Happiness	7.75	(6)	4.25	(3)	7.75	(8)
Inner Happiness	9.00	(7)	9.00	(8)	11.00	(12.5)
Mature Love	13.00	(15)	9.00	(8)	9.00	(9)
National Security	10.00	(9)	14.00	(15.5)	10.00	(10.5)
Pleasure	15.00	(17)	15.00	(17)	15.00	(16)
Salvation	11.25	(12)	1.33	(1)	1.33	(1)
Self-Respect	5.75	(3)	10.75	(12)	7.00	(6.5)
Social Recognition	16.75	(18)	17.67	(18)	15.00	(16)
True Friendship	11.00	(11)	11.00	(13)	11.75	(14)
Wisdom	6.00	(4)	7.00	(5)	5.75	(5)
K =	9		5		5	

TABLE 59

TERMINAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR GNS SCORE 5 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata S1		Strata S2		Strata S3	
A Comfortable Life	4.00	(3.5)	7.50	(8)	9.50	(11)
An Exciting Life	17.75	(18)	15.50	(17.5)	11.50	(14.5)
A Sense of Accomplishment	5.00	(5.5)	6.50	(7)	9.00	(9)
A World at Peace	13.00	(12)	5.50	(5)	9.50	(11)
A World of Beauty	13.00	(12)	12.50	(14)	12.50	(16)
Equality	14.00	(14.5)	14.50	(15.5)	13.50	(17)
Family Security	1.25	(1)	1.50	(1)	1.83	(1)
Freedom	9.00	(7.5)	4.50	(3)	5.50	(4.5)
Happiness	4.00	(3.5)	3.50	(2)	4.50	(3)
Inner Happiness	5.00	(5.5)	5.50	(5)	6.50	(6)
Mature Love	14.75	(16)	8.50	(9)	8.50	(7.5)
National Security	12.00	(10)	9.50	(10.5)	5.50	(4.5)
Pleasure	13.00	(12)	9.50	(10.5)	11.50	(14.5)
Salvation	14.00	(14.5)	14.50	(15.5)	10.50	(13)
Self Respect	3.00	(2)	5.50	(5)	3.50	(2)
Social Recognition	15.00	(17)	15.50	(17.5)	16.00	(18)
True Friendship	9.00	(7.5)	11.50	(12.5)	9.50	(11)
Wisdom	11.00	(9)	11.50	(12.5)	8.50	(7.5)
K =	3		3		6	

TABLE 59--Continued

Value	Strata S5		Strata S6	
A Comfortable Life	13.00	(14)	2.50	(1.5)
An Exciting Life	16.50	(16.5)	11.50	(15)
A Sense of Accomplishment	7.50	(11.5)	8.00	(10)
A World of Peace	2.50	(2.5)	6.50	(7.5)
A World of Beauty	14.50	(15)	16.50	(17)
Equality	5.50	(8.5)	3.50	(3.5)
Family Security	4.50	(6.5)	2.50	(1.5)
Freedom	3.50	(4.5)	6.50	(7.5)
Happiness	5.50	(8.5)	5.50	(5.5)
Inner Happiness	2.50	(2.5)	9.50	(12.5)
Mature Love	4.50	(6.5)	8.50	(10)
National Security	6.50	(10)	17.50	(18)
Pleasure	16.50	(16.5)	9.50	(12.5)
Salvation	1.00	(1)	16.00	(16)
Self Respect	7.50	(11.5)	3.50	(3.5)
Social Recognition	17.50	(18)	7.50	(9)
True Friendship	12.50	(13)	10.50	(14)
Wisdom	3.50	(4.5)	5.50	(5.5)
K =	2		4	

TABLE 60

TERMINAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR GNS SCORE 4 SURVEY RESPONDENTS IN STRATUM 5

Value	Stratum 5	
A Comfortable Life	6.00	(5)
An Exciting Life	5.50	(3.5)
A Sense of Accomplishment	6.50	(6)
A World at Peace	7.00	(7)
A World of Beauty	12.50	(14)
Equality	13.00	(15.5)
Family Security	4.00	(2)
Freedom	9.00	(10)
Happiness	8.50	(8.5)
Inner Happiness	12.00	(13)
Mature Love	13.00	(15.5)
National Security	3.50	(1)
Pleasure	8.50	(8.5)
Salvation	11.50	(11.5)
Self Respect	5.50	(3.5)
Social Recognition	16.00	(18)
True Friendship	14.00	(17)
Wisdom	11.50	(11.5)
K =	6	

TABLE 61

INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR GNS SCORE 7 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata					
	S1		S2		S3	
Ambitious	7.00	(5)	5.50	(3.5)	4.13	(2)
Broadminded	5.25	(3)	5.50	(3.5)	9.75	(9)
Capable	6.00	(4)	6.50	(6.5)	5.33	(4)
Cheerful	13.75	(15)	11.50	(16)	9.00	(5.5)
Clean	17.00	(18)	13.00	(17)	9.00	(5.5)
Courageous	8.25	(7)	6.50	(6.5)	10.75	(12)
Forgiving	11.00	(10.5)	4.50	(2)	12.25	(13)
Helpful	11.00	(10.5)	8.50	(9.5)	9.25	(7.5)
Honest	1.75	(1)	6.00	(5)	2.75	(1)
Imaginative	12.75	(12)	10.50	(14.5)	13.25	(16.5)
Independent	8.00	(6)	7.50	(8)	10.00	(10)
Intellectual	13.00	(13.5)	13.50	(18)	13.25	(16.5)
Logical	9.00	(8)	9.50	(12)	13.00	(14.5)
Loving	16.00	(17)	10.50	(14.5)	13.00	(14.5)
Obedient	13.00	(13.5)	9.50	(12)	14.67	(18)
Polite	14.00	(16)	9.50	(12)	10.38	(11)
Responsible	5.00	(2)	2.50	(1)	4.33	(3)
Self-Controlled	10.00	(9)	8.50	(9.5)	9.25	(7.5)
K =	5		6		17	

TABLE 61--Continued

Value	Strata S4		S5		S6	
Ambitious	8.00	(7.5)	2.50	(1)	8.50	(8.5)
Broadminded	7.25	(5)	9.00	(9)	10.17	(11)
Capable	11.00	(13)	6.50	(3.5)	7.50	(5)
Cheerful	16.00	(17)	8.50	(7)	8.50	(8.5)
Clean	12.25	(14)	12.00	(14)	6.50	(3)
Courageous	9.00	(9)	10.50	(11.5)	10.50	(12.5)
Forgiving	4.00	(3)	8.50	(7)	7.17	(4)
Helpful	8.00	(7.5)	6.50	(3.5)	8.17	(7)
Honest	2.75	(1)	3.50	(2)	3.50	(2)
Imaginative	14.75	(16)	12.50	(15.5)	10.50	(12.5)
Independent	7.00	(4)	14.50	(17)	9.50	(10)
Intellectual	10.25	(12)	11.50	(13)	11.83	(14)
Logical	7.75	(6)	8.50	(7)	13.50	(16.5)
Loving	10.00	(10.5)	9.50	(10)	13.50	(16.5)
Obedient	17.67	(18)	14.83	(18)	15.00	(18)
Polite	14.00	(15)	10.50	(11.5)	13.00	(15)
Responsible	3.00	(2)	7.50	(5)	2.50	(1)
Self-Controlled	10.00	(10.5)	12.50	(15.5)	8.00	(6)
K =	5		10		8	

TABLE 62

INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR GNS SCORE 6 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata S1		S2		S3	
Amtitious	4.50	(4)	4.50	(4.5)	3.25	(3)
Broadminded	8.50	(8)	4.50	(4.5)	10.83	(12)
Capable	3.50	(3)	3.00	(2)	4.00	(4)
Cheerful	14.50	(17.5)	12.50	(14)	13.50	(16)
Clean	14.50	(17.5)	15.50	(18)	8.50	(6.5)
Courageous	6.50	(6)	7.50	(7)	9.50	(8.5)
Forgiving	10.50	(13)	9.50	(10.5)	12.50	(14)
Helpful	6.00	(5)	7.50	(7)	9.50	(8.5)
Honest	1.50	(1.5)	3.00	(2)	2.50	(2)
Imaginative	8.50	(8)	8.50	(9)	13.50	(16)
Independent	10.50	(13)	9.50	(10.5)	6.50	(5)
Indellectual	13.50	(15.5)	10.50	(12)	10.25	(10)
Logical	9.50	(10.5)	7.50	(7)	8.50	(6.5)
Loving	13.50	(15.5)	13.50	(15.5)	15.00	(18)
Obedient	10.50	(13)	14.50	(17)	13.50	(16)
Polite	9.50	(10.5)	13.50	(15.5)	11.75	(13)
Responsible	1.50	(1.5)	3.00	(2)	1.90	(1)
Self Controlled	8.50	(8)	11.00	(13)	10.50	(11)
K =	4		6		12	

TABLE 62--Continued

Value	Strata					
	S4		S5		S6	
Ambitious	4.00	(2)	15.00	(15.5)	4.00	(3)
Broadminded	9.75	(7)	6.00	(3)	6.33	(5)
Capable	5.75	(4)	4.75	(2)	5.00	(4)
Cheerful	12.75	(16)	11.00	(10.5)	16.00	(17.5)
Clean	10.00	(9.5)	7.00	(6)	9.00	(8.5)
Courageous	13.00	(17)	13.00	(13)	10.75	(11)
Forgiving	10.00	(9.5)	10.00	(9)	9.00	(8.5)
Helpful	11.25	(14)	7.00	(6)	10.00	(10)
Honest	2.00	(1)	4.00	(1)	1.25	(1)
Imaginative	11.75	(15)	13.00	(13)	16.00	(17.5)
Independent	10.00	(9.5)	15.00	(15.5)	11.75	(14)
Intellectual	9.00	(5)	17.67	(18)	8.00	(7)
Logical	10.00	(9.5)	9.00	(8)	11.00	(12.5)
Loving	11.00	(12.5)	7.00	(6)	13.25	(15)
Obedient	14.00	(18)	16.67	(17)	14.00	(16)
Polite	11.00	(12.5)	13.00	(13)	11.00	(12.5)
Responsible	5.00	(3)	6.25	(4)	3.25	(2)
Self-Controlled	9.25	(6)	11.00	(10.5)	6.75	(6)
K =	9		5		5	

TABLE 63

INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR GNS SCORE 5 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata					
	S1		S2		S3	
Ambitious	9.00	(7.5)	9.50	(11.5)	3.50	(2)
Broadminded	6.00	(4)	5.50	(4.5)	8.50	(9)
Capable	8.00	(5.5)	4.50	(3)	4.50	(3.5)
Cheerful	8.00	(5.5)	8.00	(9)	9.50	(11)
Clean	13.00	(14.5)	9.00	(10)	6.50	(5.5)
Courageous	9.00	(7.5)	9.50	(11.5)	12.83	(16)
Forgiving	11.00	(11)	6.50	(6.5)	9.00	(10)
Helpful	10.00	(9.5)	6.50	(6.5)	10.50	(14)
Honest	1.00	(1)	1.25	(1)	2.50	(1)
Imaginative	14.00	(16.5)	14.00	(16)	7.50	(7.5)
Independent	12.00	(12.5)	14.50	(17.5)	14.50	(17)
Intellectual	13.00	(14.5)	13.50	(15)	16.50	(18)
Logical	15.00	(18)	10.50	(13)	6.50	(5.5)
Loving	5.00	(3)	5.50	(4.5)	12.50	(15)
Obedient	14.00	(16.5)	14.50	(17.5)	10.00	(12.5)
Polite	10.00	(9.5)	7.17	(8)	10.00	(12.5)
Responsible	3.00	(2)	2.50	(2)	4.50	(3.5)
Self Controlled	12.00	(12.5)	11.50	(14)	7.50	(7.5)
K =	3		3		6	

TABLE 63--Continued

Value	Strata S5		Strata S6	
Ambitious	7.50	(9)	3.50	(3)
Broadminded	11.00	(14)	5.50	(5.5)
Capable	6.50	(8)	4.50	(4)
Cheerful	8.50	(10.5)	13.50	(17)
Clean	4.50	(5)	6.50	(7.5)
Courageous	2.50	(2.5)	5.50	(5.5)
Forgiving	2.50	(2.5)	10.00	(11)
Helpful	3.50	(4)	6.50	(7.5)
Honest	1.00	(1)	2.50	(1.5)
Imaginative	15.50	(15.5)	16.50	(18)
Independent	15.50	(15.5)	9.50	(10)
Intellectual	11.50	(17.5)	12.50	(15.5)
Logical	16.50	(17.5)	11.50	(13.5)
Loving	5.50	(6.5)	10.50	(12)
Obedient	9.50	(12)	11.50	(13.5)
Polite	10.50	(13)	8.50	(9)
Responsible	8.50	(10.5)	2.50	(1.5)
Self-Controlled	5.50	(6.5)	12.50	(15.5)
K =	2		4	

TABLE 64

INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR GNS SCORE 4 SURVEY RESPONDENTS IN STRATUM 5

Value	Stratum 5	
Ambitious	6.50	(5.5)
Broadminded	7.50	(7)
Capable	3.50	(3)
Cheerful	13.00	(14.5)
Clean	5.30	(4)
Courageous	10.50	(11.5)
Forgiving	11.50	(13)
Helpful	7.83	(8)
Honest	1.25	(1)
Imaginative	16.50	(18)
Independent	13.00	(14.5)
Intellectual	16.00	(17)
Logical	13.50	(16)
Loving	8.50	(9)
Obedient	10.50	(11.5)
Polite	8.83	(10)
Responsible	3.17	(2)
Self-Controlled	6.50	(5.5)
K =	6	

APPENDIX J

TERMINAL AND INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS BY MPS *GROUPINGS AND STRATA*

LEGEND FOR APPENDIX J

1. All Figures which are not enclosed in parentheses are medians of the respective values.

2. All figures in parentheses reflect the rank orders of the respective values.

3. Strata are denoted as follows:

   S1 = Top Management Stratum

   S2 = Middle Management Stratum

   S3 = 1st Lower Management Stratum in O&M

   S4 = 1st Lower Management Stratum excluding O&M

   S5 = Rank and File Stratum in O&M

   S6 = General Office Workers Stratum

4. K = Number of cases in the strata.

TABLE 65

TERMINAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR MPS GROUPING 1 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata					
	S1		S2		S3	
A Comfortable Life	4.00	(3.5)	1.50	(1.5)	10.00	(10)
An Exciting Life	17.75	(18)	5.50	(8.5)	13.25	(14)
A Sense of Accomplishment	5.00	(5.5)	8.50	(11)	9.00	(8)
A World at Peace	13.00	(12)	3.50	(5.5)	7.75	(6)
A World of Beauty	13.00	(12)	5.50	(8.5)	14.75	(16)
Equality	14.00	(14.5)	9.50	(12.5)	10.00	(10)
Family Security	1.25	(1)	1.50	(1.5)	2.00	(1)
Freedom	9.00	(7.5)	2.50	(3.5)	6.00	(2.5)
Happiness	4.00	(3.5)	2.50	(3.5)	7.00	(4.5)
Inner Happiness	5.00	(5.5)	9.50	(12.5)	10.00	(10)
Mature Love	14.75	(16)	12.50	(15.5)	10.25	(12.5)
National Security	12.00	(10)	11.50	(14)	7.00	(4.5)
Pleasure	13.00	(12)	12.50	(15.5)	15.75	(17)
Salvation	14.00	(14.5)	16.50	(18)	16.60	(18)
Self-Respect	3.00	(2)	3.50	(5.5)	6.00	(2.5)
Social Recognition	15.00	(17)	13.50	(17)	14.25	(15)
True Friendship	9.00	(7.5)	4.50	(7)	10.25	(12.5)
Wisdom	11.00	(9)	7.50	(10)	8.76	(7)
K	4		2		8	

TABLE 65--Continued

Value	Strata S4		S5		S6	
A Comfortable Life	12.50	(14)	6.00	(5)	7.75	(7)
An Exciting Life	13.00	(15)	5.50	(3.5)	13.00	(13)
A Sense of Accomplishment	9.50	(11.5)	6.50	(6)	9.00	(9)
A World at Peace	7.50	(9.5)	7.00	(7)	6.00	(4.5)
A World of Beauty	13.50	(16)	9.50	(10.5)	17.00	(17.5)
Equality	10.50	(13)	13.00	(17)	5.00	(2.5)
Family Security	2.00	(1)	4.50	(2)	3.00	(1)
Freedom	6.50	(7)	3.50	(1)	5.00	(2.5)
Happiness	7.50	(9.5)	10.50	(12.5)	6.00	(4.5)
Inner Happiness	9.50	(11.5)	11.83	(15)	11.00	(11)
Mature Love	6.50	(7)	9.50	(10.5)	12.25	(12)
National Security	6.50	(7)	10.50	(12.5)	17.00	(17.5)
Pleasure	15.50	(17)	8.50	(8.5)	14.75	(15)
Salvation	4.50	(2.5)	15.00	(18)	16.67	(16)
Self Respect	5.00	(4.5)	5.50	(3.5)	7.00	(6)
Social Recognition	16.50	(18)	12.50	(16)	14.00	(14)
True Friendship	5.50	(4.5)	11.50	(14)	10.25	(9)
Wisdom	4.50	(2.5)	8.50	(8.5)	8.75	(7)
K =	3		5		6	

TABLE 66

TERMINAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR MPS GROUPING 2 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata S1		Strata S2		Strata S3	
A Comfortable Life	17.50	(18)	7.50	(6.5)	6.33	(5)
An Exciting Life	10.00	(11.5)	13.50	(16)	14.75	(16)
A Sense of Accomplishment	8.50	(9.5)	6.50	(5)	7.75	(9)
A World at Peace	8.00	97)	8.00	(8)	9.25	(10)
A World of Beauty	11.50	(15)	13.50	(16)	15.75	(17)
Equality	7.00	(3)	14.50	(18)	12.33	(14)
Family Security	8.00	(7)	2.500	(1)	2.20	(1)
Freedom	8.50	(9.5)	5.50	(3)	5.75	(2)
Happiness	6.00	(2)	5.50	(3)	6.00	(3.5)
Inner Happiness	4.00	(1)	7.50	(6.5)	10.25	(12)
Mature Love	7.50	(4.5)	11.50	(13)	9.67	(11)
National Security	11.50	(15)	8.50	(9.5)	6.00	(3.5)
Pleasure	11.00	(13)	10.50	(12)	13.00	(15)
Salvation	8.00	(7)	8.50	(9.5)	7.00	(7.5)
Self-Respect	7.50	(4.5)	5.50	(3)	7.00	(7.5)
Social Recognition	15.50	(17)	13.50	(16)	16.25	(18)
True Friendship	10.00	(11.5)	11.75	(14)	11.38	(13)
Wisdom	11.50	(15)	9.00	(11)	6.38	(6)
K =	6		10		20	

TABLE 66--Continued

Value	Strata S4		S5		S6	
A Comfortable Life	6.75	(6)	12.83	(14)	6.50	(6)
An Exciting Life	12.75	(14)	15.50	(16)	11.50	(14)
A Sense of Accomplishment	8.00	(7.5)	11.50	(12.5)	10.50	(12.5)
A World at Peace	9.33	(9)	9.00	(9)	5.50	(3)
A World of Beauty	14.00	(16)	14.50	(15)	15.17	(18)
Equality	12.25	(13)	10.00	(10)	12.50	(15.5)
Family Security	3.75	(1.5)	3.50	(2)	3.50	(1)
Freedom	3.75	(1.5)	8.75	(8)	5.50	(3)
Happiness	5.00	(3)	6.00	(4)	5.50	(3)
Inner Happiness	8.00	(7.5)	7.50	(5)	9.50	(11)
Mature Love	13.00	(15)	8.25	(6)	8.50	(9)
National Security	9.88	(10)	10.17	(11)	10.50	(12.5)
Pleasure	14.75	(17)	15.83	(17)	13.50	(17)
Salvation	10.75	(11.5)	1.36	(1)	7.50	(8)
Self-Respect	6.25	(5)	8.50	(7)	7.00	(7)
Social Recognition	16.25	(18)	16.83	(18)	12.50	(15.5)
True Friendship	10.75	(11.5)	11.50	(12.5)	9.00	(10)
Wisdom	5.25	(4)	4.50	(3)	5.83	(5)
K =	10		13		9	

TABLE 67

TERMINAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR MPS GROUPING 3 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata					
	S1		S2		S3	
A Comfortable Life	11.50	(14)	7.0	(11)	8.00	(6.5)
An Exciting Life	17.50	(17.5)	4.5	(6.5)	10.75	(9.5)
A Sense of Accomplishment	7.50	(10)	6.5	(9.5)	8.75	(8)
A World at Peace	4.50	(5)	2.50	(3.5)	7.00	(4)
A World of Beauty	17.50	(17.5)	17.5	(18)	14.00	(17.5)
Equality	10.50	(13)	4.5	(6.5)	12.00	(12.5)
Family Security	2.00	(2)	3.5	(5)	2.25	(1)
Freedom	3.50	(3.5)	1.5	(1.5)	6.00	(2)
Happiness	5.50	(6.5)	6.5	(9.5)	8.00	(6.5)
Inner Happiness	6.50	(8.5)	9.5	(13.5)	12.00	(12.5)
Mature Love	9.50	(12)	8.5	(12)	12.67	(14)
National Security	6.50	(8.5)	1.5	(1.5)	10.75	(9.5)
Pleasure	14.50	(16)	10.5	(15)	13.00	(15.5)
Salvation	1.00	(1)	15.5	(17)	14.00	(17.5)
Self Respect	8.00	(11)	9.5	(13.5)	6.67	(3)
Social Recognition	13.00	(15)	14.5	(16)	13.00	(15.5)
True Friendship	5.50	(6.5)	2.5	(3.5)	11.00	(11)
Wisdom	3.50	(3.5)	5.5	(8)	7.75	(5)
K =	2		3		9	

TABLE 67--Continued

Value	Strata					
	S4		S5		S6	
A Comfortable Life	7.50	(8.5)	8.50)	(9.5)	11.00	(11)
An Exciting Life	4.50	(6.5)	11.50	(12)	13.75	(15)
A Sense of Accomplishment	8.50	(10.5)	6.00	(7)	8.00	(7)
A World at Peace	4.50	(6.5)	2.50	(1.5)	4.00	(2)
A World of Beauty	7.50	(8.5)	15.50	(16.5)	16.00	(18)
Equality	12.50	(14)	4.50	(5)	12.75	(14)
Family Security	1.50	(1.5)	3.50	(3.5)	2.00	(1)
Freedom	2.50	(3.5)	3.50	(3.5)	6.00	(4.5)
Happiness	5.50	(8)	7.50	(8)	9.75	(8)
Inner Happiness	13.00	(16)	14.00	(15)	11.00	(11)
Mature Love	3.50	(5)	13.17	(13)	10.00	(9)
National Security	11.50	(13)	8.50	(9.5)	6.25	(6)
Pleasure	17.50	(18)	15.50	(16.5)	15.75	(17)
Salvation	1.50	(1.5)	10.50	(11)	15.00	(16)
Self-Respect	9.50	(12)	5.17	(6)	6.00	4.5)
Social Recognition	16.00	(17)	17.50	(18)	12.00	(13)
True Friendship	8.50	(10.5)	13.50	(14)	11.00	(11)
Wisdom	2.50	(3.5)	2.50	(1.5)	5.00	(3)
K =	2		6		5	

TABLE 68

INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR MPS GROUPING 1 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata					
	S1		S2		S3	
Ambitious	9.00	(7.5)	1.50	(1)	3.75	(2)
Broadminded	6.00	(4)	2.00	(2)	7.75	(5)
Capable	8.00	(5.5)	8.50	(11.5)	7.00	(4)
Cheerful	8.00	(5.5)	12.50	(15.5)	12.00	(11.5)
Clean	13.00	(14.5)	18.00	(18)	12.67	(13)
Courageous	9.00	(7.5)	3.50	(4.5)	8.00	(6.5)
Forgiving	11.00	(11)	4.50	(6.5)	12.00	(11.5)
Helpful	10.00	(9.5)	5.50	(8)	9.00	(8.5)
Honest	1.00	(1)	3.50	(4.5)	2.00	(1)
Imaginative	14.00	(16.5)	8.50	(11.5)	14.75	(18)
Independent	12.00	(12.5)	6.50	(9)	8.00	(6.5)
Intellectual	13.00	(14.5)	7.50	(10)	14.00	(16.5)
Logical	15.00	(18)	4.50	(6.5)	12.75	(14)
Loving	5.00	(3)	10.50	(13)	11.25	(10)
Obedient	14.00	(16.5)	11.50	(14)	14.00	(16.5)
Polite	10.00	(9.5)	12.50	(15.5)	13.00	(15)
Responsible	3.00	(2)	2.50	(3)	4.25	(3)
Self-Controlled	12.00	(12.5)	14.50	(17)	9.00	(8.5)
K =	4		2		8	

TABLE 68--Continued

Value	Strata					
	S4		S5		S6	
Ambitious	4.00	(4)	5.50	(4)	7.00	(6.5)
Broadminded	11.50	(15)	5.50	(4)	7.00	(6.5)
Capable	6.50	(7.5)	5.50	(4)	4.00	(2.5)
Cheerful	13.50	(16.5)	12.00	(14)	13.00	(14)
Clean	2.50	(2)	6.50	(6)	6.00	(5)
Courageous	7.50	(10.5)	7.50	(8.5)	7.25	(8)
Forgiving	5.50	(5)	9.50	(12)	9.00	(9)
Helpful	3.50	(3)	8.50	(10.5)	4.00	(2.5)
Honest	2.00	(1)	1.50	(1)	1.75	(1)
Imaginative	7.50	(10.5)	16.00	(16.5)	17.00	(18)
Independent	6.50	(7.5)	13.00	(15)	12.00	(12)
Intellectual	9.50	(13.5)	16.00	(16.5)	16.00	(17)
Logical	13.50	(16.5)	11.50	(13)	12.75	(13)
Loving	8.50	(12)	8.50	(10.5)	14.67	(16)
Obedient	14.17	(18)	14.50	(18)	14.25	(15)
Polite	6.50	(7.5)	7.50	(8.5)	10.00	(10.5)
Responsible	6.50	(7.5)	7.00	(7)	4.25	(4)
Self-Controlled	9.50	(13.5)	4.50	(2)	10.00	(10.5)
K =	3		5		6	

TABLE 69

INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR MPS GROUPING 2 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata S1		S2		S3	
Ambitious	13.50	(16.5)	6.50	(5.5)	3.13	(1)
Broadminded	7.00	(5)	5.50	(3.5)	11.00	(11)
Capable	9.50	(10)	5.50	(3.5)	4.20	(4)
Cheerful	7.50	(6.5)	9.50	(9)	8.75	(6)
Clean	17.50	(18)	9.50	(9)	5.75	(5)
Courageous	6.00	(3)	10.83	(14)	12.00	(14)
Forgiving	8.00	(8)	7.50	(7)	11.75	(12.5)
Helpful	7.50	(6.5)	6.50	(5.5)	9.25	(7)
Honest	1.50	(1)	2.00	(1)	4.00	(3)
Imaginative	12.00	(14.5)	10.50	(13)	14.25	(16)
Independent	9.00	(9)	14.83	(17)	10.25	(9)
Intellectual	13.50	(16.5)	15.50	(18)	15.75	(18)
Logical	10.50	(11)	10.00	(12)	10.75	(10)
Loving	2.50	(2)	12.50	(15)	14.75	(17)
Obedient	12.00	(14.5)	14.50	(16)	12.62	(15)
Polite	11.00	(12.5)	9.50	(9)	10.00	(8)
Responsible	6.50	(4)	2.50	(2)	3.75	(2)
Self-Controlled	11.00	(12.5)	9.83	(11)	11.75	(12.5
K =	6		10		20	

TABLE 69--Continued

Value	Strata					
	S4		S5		S6	
Ambitious	7.00	(5)	12.00	(13)	8.00	(6.5)
Broadminded	7.33	(6)	7.50	(6.5)	9.50	(10.5)
Capable	5.00	(3)	6.00	(2)	7.50	(5)
Cheerful	12.75	(13.7)	10.50	(11)	13.50	(16.5)
Clean	11.75	(12)	7.50	(6.5)	9.00	(9)
Courageous	12.75	(13.5)	12.50	(14.5)	10.83	(12)
Forgiving	10.00	(8)	7.50	(6.5)	6.83	(3)
Helpful	10.75	(10)	6.50	(3.5)	8.00	(6.5)
Honest	1.75	(1)	1.50	(1)	1.33	(1)
Imaginative	14.00	(17)	14.50	(16.5)	12.50	(15)
Independent	11.00	(11)	15.17	(18)	9.50	(10.5)
Intellectual	10.25	(9)	14.50	(16.5)	11.83	(14)
Logical	6.25	(4)	12.50	(14.7)	14.00	(18)
Loving	15.00	(18)	6.50	(3.5)	11.50	(13)
Obedient	13.00	(15.5)	10.50	(11)	13.50	(16.5)
Polite	13.00	(15.5)	10.50	(11)	8.50	(8)
Responsible	2.75	(2)	8.50	(9)	2.50	(2)
Self-Controlled	9.25	(7)	7.50	(6.5)	7.25	(4)
K =	10		13		9	

TABLE 70

INSTRUMENTAL VALUES MEDIANS AND COMPOSITE RANK ORDERS FOR MPS GROUPING 3 SURVEY RESPONDENTS BY THEIR STRATA

Value	Strata S1		Strata S2		Strata S3	
Ambitious	2.50	(3)	2.50	(3.5)	5.25	(5)
Broadminded	5.50	(8)	4.50	(7.5)	10.00	(9)
Capable	4.50	(6.5)	3.50	(5.5)	4.75	(4)
Cheerful	14.00	(17)	8.50	(12.5)	13.75	(15)
Clean	6.50	(9)	10.50	(15)	10.00	(9)
Courageous	9.50	(12)	8.50	(12.5)	9.00	(8)
Forgiving	11.50	(14.5)	4.50	(7.5)	14.00	(16)
Helpful	7.50	(10)	11.50	(16.5)	10.00	(9)
Honest	1.50	(1.5)	1.50	(1.5)	1.40	(1)
Imaginative	8.50	(11)	5.50	(9)	11.00	(13)
Independent	3.50	(4.5)	3.50	(5.5)	8.00	(6.5)
Intellectual	10.50	(13)	6.50	(10)	8.00	(6.5)
Logical	3.50	(4.5)	13.50	(18)	11.75	(14)
Loving	16.50	(18)	2.50	(3.5)	17.00	(18)
Obedient	13.50	(16)	7.50	(11)	15.63	(17)
Polite	11.50	(14.5)	9.5	(14)	10.75	(12)
Responsible	4.50	(6.5)	1.5	(1.5)	2.20	(2)
Self-Controlled	1.50	(1.5)	11.5	(16.5)	4.25	(3)
K =	2		3		9	

TABLE 70--Continued

Value	Strata					
	S4		S5		S6	
Ambitious	1.50	(1.5)	1.83	(1)	1.33	(1)
Broadminded	2.50	(3.5)	9.50	(10.5)	10.00	(10)
Capable	11.50	(15)	5.50	(4.5)	6.75	(6)
Cheerful	15.50	(17)	8.50	(9)	13.75	(16)
Clean	1.50	(1.5)	5.50	(4.5)	6.00	(4.5)
Courageous	4.50	(7)	7.50	(7.5)	6.00	(4.5)
Forgiving	3.50	(6)	14.00	(17)	12.00	(14)
Helpful	2.50	(3.5)	6.50	(6)	8.25	(8)
Honest	3.00	(5)	4.17	(3)	5.25	(3)
Imaginative	9.50	(13)	10.50	(12)	10.25	(11)
Independent	6.50	(10)	7.50	(7.5)	11.00	(12.5)
Intellectual	7.50	(11)	11.50	(13.5)	9.00	(9)
Logical	8.00	(12)	9.50	(10.5)	13.00	(15)
Loving	5.50	(8.5)	13.50	(16)	14.75	(17)
Obedient	18.00	(18)	15.50	(18)	15.00	(18)
Polite	10.50	(14)	11.50	(13.5)	11.00	(12.5)
Responsible	5.50	(8.5)	3.50	(2)	2.75	(2)
Self-Controlled	12.50	(16)	12.00	(15)	8.00	(7)
K =	2		6		5	

APPENDIX K

SUMMARY OF SPEARMAN RANK CORRELATION COEFFICIENTS BY STRATA FOR GNS SCORES AND MPS GROUPINGS

TABLE 71

SUMMARY MATRIX OF SPEARMAN RANK CORRELATION COEFFICIENTS FOR COMPOSITE TERMINAL VALUES
RANK ORDERS BY STRATA FOR GMS SCORES

Stratum/ GMS Score	Stratum/GMS Score																	
	S1/7	S2/7	S3/7	S4/7	S5/7	S6/7	S1/6	S2/6	S3/6	S4/6	S5/6	S6/6	S1/5	S2/5	S3/5	S5/5	S6/5	S5/4
S1/7	-	.48*	.74**	.77**	.75**	.51*	.20	.30	.35	.57*	.66*	.67**	.16	.40	.57*	.74**	.16	.02
S2/7		-	.72**	.53*	.53*	.39	.29	.49*	.51*	.66**	.68**	-.03	.41*	-.04	-.21	-.08	-.14	.35
S3/7			-	.75**	.77**	.63**	.20	.61*	.66**	.76**	.79**	.83**	.39	.65*	.67**	.70**	.47*	.47*
S4/7				-	.75**	.62**	.08	.27	.44*	.52**	.74**	.80**	.04	.51*	.60*	.75**	.20	.05
S5/7					-	.67**	.15	.52*	.57*	.68**	.68**	.88**	.10	.60*	.60*	.75**	.55*	.20
S6/7						-	.58*	.69**	.66**	.74**	.47*	.59*	.47*	.77**	.76**	.52*	.52*	.28
S1/6							-	.57*	.39*	.42*	.23	.03	.80**	.43*	.51*	-.07	.44*	.20
S2/6								-	.85**	.88**	.47*	.42*	.69**	.71**	.76**	.27	.62*	.65*
S3/6									-	.87**	.58*	.60*	.58*	.88**	.86**	.44*	.64*	.60*
S4/6										-	.66**	.61*	.56*	.86**	.85**	.54*	.59*	.53*
S5/6											-	.71**	.29	.63*	.58*	.74**	.50*	.14
S6/6												-	.03	.57*	.57*	.85**	.51*	.20
S1/5													-	.88**	.58*	.61*	.56*	.33*
S2/5														-	.56*	.58*	.61*	.43*
S3/5															-	.41*	.26	.51*
S5/5																-	.13	-.02
S6/5																	-	.16
S5/4																		-

* Indicates significance of α = .05 to .002.

** Indicates significance of α = .001.

TABLE 72

SUMMARY MATRIX OF SPEARMAN RANK CORRELATION COEFFICIENTS FOR COMPOSITE INSTRUMENTAL VALUES RANK ORDERS BY STRATA FOR GHS SCORES

Stratum/ GHS Score	Stratum/GHS Score																	
	S1/7	S2/7	S3/7	S4/7	S5/7	S6/7	S1/6	S2/6	S3/6	S4/6	S5/6	S6/6	S1/5	S2/5	S3/5	S5/5	S6/5	S5/4
S1/7	-	.75**	.48*	.71**	.49*	.45*	.81**	.84**	.71**	.48*	.42*	.64*	.37	.37	.32	.21	.69**	.47*
S2/7		-	.47*	.74**	.51*	.48*	.72**	.73**	.50*	.46*	.36	.63**	.52*	.47*	.41*	.34*	.71**	.50**
S3/7			-	.37	.65*	.80**	.52*	.52*	.68**	.61*	.54*	.67**	.66*	.58*	.64*	.45*	.69**	.79**
S4/7				-	.48*	.45*	.48*	.65**	.58*	.58*	.42*	.59*	.43*	.43**	.24*	.25*	.57*	.33*
S5/7					-	.46*	.57*	.69**	.48*	.50*	.56*	.57*	.65*	.73**	.54*	.38*	.61*	.49**
S6/7						-	.41*	.42**	.58*	.56*	.56*	.66*	.48*	.53*	.57*	.56*	.52**	.66**
S1/6							-	.86**	.62**	.47*	.40*	.64*	.44*	.43*	.54*	.27	.68**	.57*
S2/6								-	.67**	.57**	.47*	.65**	.49*	.48*	.51*	.11	.65**	.39*
S3/6									-	.71**	.31	.73**	.24	.27*	.52*	.14	.74**	.56*
S4/6										-	.37	.88**	.38*	.41**	.60*	.05	.54*	.57**
S5/6											-	.47*	.62*	.86*	.54*	.44*	.52**	.66**
S6/6												-	.48*	.54**	.58*	.34*	.74*	.76*
S1/5													-	.84*	.28*	.50*	.62**	.64**
S2/5														-	.42*	.51*	.65*	.68*
S3/5															-	.21	.45*	.61*
S5/5																-	.45*	.59*
S6/5																	-	.79**
S5/4																		-

* Indicates significance at $\alpha = .05$ to $.002$.

** Indicates significance at $\alpha = .001$.

TABLE 73

SUMMARY MATRIX OF SPEARMAN RANK CORRELATION COEFFICIENTS FOR COMPOSITE TERMINAL VALUES
RANK ORDERS BY STRATA FOR MPS GROUPINGS

Stratum/ MPS Groupings	Stratum/MPS Groupings																	
	S1/1	S2/1	S3/1	S4/1	S5/1	S6/1	S1/2	S2/2	S3/2	S4/2	S5/2	S6/2	S1/3	S2/3	S3/3	S4/3	S5/3	S6/3
S1/1	-	.41*	.20	.81**	.40*	.06	.69**	.41*	.83**	.38*	.19	.39*	.69**	.52*	.67**	.57*	.66*	.55*
S2/1		-	.31	.61*	.85**	.62*	.22	.13	.48*	.82**	.37	.57**	.51*	.35	.69**	.70**	.47*	.63*
S3/1			-	.28	.33*	.10	.05	-.14	.33*	.62*	.04	.25**	.29**	.44**	.16**	.30**	.14**	.19**
S4/1				-	.68**	.46*	.71**	.50*	.86**	.64**	.46*	.75**	.85**	.71**	.87**	.84**	.86**	.77**
S5/1					-	.47*	.22	.02	.58*	.81**	.41*	.60*	.50*	.43*	.72**	.77**	.47*	.63*
S6/1						-	.36	.36**	.31*	.60*	.65*	.52*	.23**	.30**	.53*	.68**	.39**	.38*
S1/2							-	.67**	.57*	.15	.45*	.53*	.65**	.69**	.52*	.64*	.79**	.51*
S2/2								-	.52*	-.04	.34	.46*	.52**	.42*	.40**	.43**	.73**	.50*
S3/2									-	.54*	.21	.51*	.74**	.51*	.82**	.75**	.72**	.68*
S4/2										-	.12	.54*	.46*	.42*	.65*	.71**	.35*	.51*
S5/2											-	.61*	.63**	.51**	.47**	.43**	.65**	.61**
S6/2												-	.77**	.76**	.68**	.71**	.82**	.78**
S1/3													-	.72**	.77**	.70**	.91**	.90**
S2/3														-	.50*	.69**	.78**	.64**
S3/3															-	.82**	.72**	.72**
S4/3																-	.78**	.78**
S5/3																	-	.87**
S6/3																		-

* Indicates significance at α = .05 to .002.

** Indicates significance at α = .001.

TABLE 74

SUMMARY MATRIX OF SPEARMAN RANK CORRELATION COEFFICIENTS FOR COMPOSITE INSTRUMENTAL VALUES
RANK ORDERS BY STRATA FOR MPS GROUPINGS

Stratum/ MPS Groupings	Stratum/MPS Groupings																	
	S1/1	S2/1	S3/1	S4/1	S5/1	S6/1	S1/2	S2/2	S3/2	S4/2	S5/2	S6/2	S1/3	S2/3	S3/3	S4/3	S5/3	S6/3
S1/1	-	.29	.75**	.32	.06	.29*	.39	.59*	.63*	.57*	.63*	.43*	.76**	.54*	.45*	.51*	.35	.36*
S2/1		-	.06	.29	.34	.66**	.21	.46*	.51*	.37*	.30	.59*	.45*	.69**	.58*	.73**	.44*	.63*
S3/1			-	.17	-.05	.17	.40*	.25	.34	.42*	.37	.14	.54*	.32	.09	.25	.06	-.05
S4/1				-	.76**	.28	.57*	.59*	.66**	.31	.30	.55*	.66**	.66*	.59*	.59*	.70**	.58*
S5/1					-	.27	.38*	.60*	.41*	.08	.13	.58*	.60*	.52*	.52*	.48*	.78**	.64*
S6/1						-	.56*	.42*	.40*	.24	.25*	.50*	.46*	.55*	.32	.40	.22	.54*
S1/2							-	.23	.41**	-.06*	.49*	.44*	.60**	.39**	.26*	.27**	.34*	.42**
S2/2								-	.72**	.63*	.22	.51*	.74**	.77**	.58**	.72**	.63*	.70**
S3/2									-	.65*	.32	.59*	.66**	.83**	.77**	.71**	.43*	.55*
S4/2										-	.18	.13	.43*	.63*	.33	.59*	.13	.19
S5/2											-	.32	.57**	.21**	.25**	.40*	.32**	.27**
S6/2												-	.70**	.72**	.84**	.42**	.67**	.79*
S1/3													-	.76**	.65**	.66**	.68*	.65**
S2/3														-	.76**	.77*	.60*	.71*
S3/3															-	.55	.52*	.59*
S4/3																-	.65*	.65**
S5/3																	-	.85
S6/3																		-

* Indicates significance at α = .05 to .002.

** Indicates significance at α = .001.

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