Student Work

1-1955

Professional performance of Y.M.C.A. senior secretaries, related to factors of their intelligence, personal values, and interests

Cecil Fayette McGee
University of Nebraska at Omaha

Recommended Citation

PROFESSIONAL PERFORMANCE OF Y.M.C.A. SENIOR SECRETARIES

RELATED TO FACTORS OF THEIR

INTELLIGENCE, PERSONAL VALUES, AND INTERESTS

by

Cecil Fayette McGee, A.B.

* * * *

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

in the

Graduate Division

of the

University of Omaha

January, 1955

UMI Number: EP72976

UMI

Dissertation Publishing

UMI EP72976

ProQuest

ACKNOWLEDGMENTS

The author wishes to express his grateful appreciation to the many persons who made this study possible. Mr. Al J. Hummel and Mr. Richard E. Hamlin, both of the Omaha Central Y.M.C.A., were valuable sources of counsel and inspiration throughout the study. The author is particularly indebted to Dr. William H. Thompson whose guidance as major adviser was indispensable. The valuable assistance in presentation form given by Dr. Stanely E. Davis is sincerely appreciated.

C. F. M.

TABLE OF CONTENTS

LIST OF TABLES

CHART

CHAPTER I

THE PROBLEM AND ITS SCOPE

The Problem

The problem of selecting social service executives by govern-
ment organizations and social service agencies has long been an
important one. Other organizations directing the efforts of people
need to know what qualities characterize successful social service
executives. Social service executives administer and supervise
many activities which involve the time and effort of other people.
They should, therefore, be carefully selected so that the objec-
tives of their employing organizations may be effectively and
economically achieved.

The purpose of this study is to determine whether any relation-
ship exists between performance ratings of Young Men's Christian
Association Senior Secretaries and their intelligence, personal
values, and interests.

Need for the Study

Mary E. Flannigan (3, p. 4) expressed the need for knowing
more about the characteristics of executives in social service
work. She concluded that:

> " . . . Agency executives must make a
> serious and systematic effort to secure,
> through selection, more competent leadership.
> . . . Agencies must place greater emphasis
> upon the necessity of setting high standards
> of qualifications and developing more success-
> ful methods of securing leaders who measure up
> to those standards."

Various methods of selecting social service executives have been used. In some instances arbitrary educational and experience standards have been established ad then without too much emphasis on what characteristics are necessary, people are selected who meet the standards. Selection on the basis of interviews is traditional. Interviews are sometimes held with little thought of actually measuring characteristics of applicants. No doubt, the establishment of educational and experience standards is good if carefully analyzed. Also, interviews can serve a useful purpose if properly used. There appears to be a gap in the use of objective tests in selecting sound social service executives. The purpose of this study is to help bridge the gap.

Mary E. Flannigan (3, p. 6) stated further:

> "Except in the selection of professional leaders little use has been made of objective tests in the selection of group leaders. This is partly because of the reluctance of an agency to put the prospective leader through an extensive testing program since it is seeking the leader rather than the reverse."

Miss Flannigan indicated that standardized tests have been used with some success in the selection and judging of personality and interest traits for employment by industrial concerns, schools, and professional groups. She believed that hiring techniques of social service agencies can ben improved by the use of standardized tests.

Executives in government service are anxious to know more about selecting persons who supervise the work of others. From Selecting Supervisors (5, p. 1) conclusions are drawn that management has the responsibility to make certain that supervisors

are the very best available. Supervisors are the people who are responsible for obtaining full utilization of the workers. Workers need capable supervision if they are to perform satisfactorily. For these reasons a systematic program of supervisory selection is a necessity.

Purpose of the Study

Y.M.C.A. Senior Secretaries are engaged in a world program for the development of a Christian personality in a Christian society. Their responsibilities for the development of character for those they serve is indeed heavy. The administration and supervision of programs to attain their objectives are required. The National Council of Young Men's Christian Associations recognizes that top quality personnel are required to execute the programs. The National Council has defined a Senior Secretary as one who has completed all requirements for employment on a full time basis, as a completely qualified secretary. To secure this title and be listed by the Y.M.C.A., a person must complete his bachelor's degree from an accredited college. Thirty credit hours in specified subjects must be included or taken in graduate work. In addition to formal schooling, two years of full time employment must be served as a Junior Secretary in an accredited Y.M.C.A. Following the trial period, references are secured from six persons who have observed the work of the applicant, and upon their recommendation the title of Senior Secretary is granted.

After careful consideration of what is expected from Y.M.C.A. Senior Secretaries and the standards established by the National Council of Young Men's Christian Associations, it appears

reasonable to assume there are characteristics which could be
measured by objective tests. Level of intelligence was one factor
which was selected for this study. This was selected because many
studies of intelligence of other occupational groups have been made,
and in all occupations intelligence seems to be an important factor.
The six basic interests or motives—theoretical, economic, aesthetic,
social, political, and religious—as categorized by "Study of Values,"
seemed to be especially appropriate to Y.M.C.A. Senior Secretaries
because of the nature of their work. Interests as measured by the
Kuder Vocational Preference Record are considered to be important
in the selection of employees for any occupational group, and it is
believed it could be helpful in selecting Y.M.C.A. Senior Secretaries.

CHAPTER II

PREVIOUS INVESTIGATIONS IN THE FIELD

Much concern is being expressed as to what qualities are

possessed by social service executives. How are some different

from others, and are there measurable differences between success-

ful and unsuccessful ones? Richard E. Hamlin (4) studied the

problem of whether there was a relationship between job performance

of a Young Men's Christian Association Adult Program Secretary and

his personality as measured by "The Personality Inventory."

Mr. Hamlin concluded that none of the six Bernreuter personality

traits was found to have a statistically significant difference

between strong, average, and weak job performance groupings of

Young Men's Christian Association Program Secretaries.

Mr. Hamlin (4, p. 30) did conclude:

> "An interesting combination of the traits
> of neurotic tendency, introversion, and con-
> fidence has been seen to have significant
> association to job performance in the men
> tested. This means that, in looking for desir-
> able traits in an Adult Program Secretary,
> according to this study, one would look for a
> man with a combination of little neurotic
> tendency, little introversion tendencies, and
> more confidence as shown on the Bernreuter."

Mary E. Flannigan (3, p. 36) used six standardized tests

measuring eighteen personality traits among successful and unsuc-

cessful social group leaders. Miss Flannigan concludes (3, p. 36):

> "The results of this study point to
> several conclusions. Although leadership is
> not a trait of personality, and the term
> 'leader' cannot be applied with scientific
> accuracy to a specific personality type,

there are certain traits of personality that
are especially desirable to those who occupy
positions of leadership as outlined in the
personnel qualifications by national group
work agencies and by national leaders in the
field of group work.

"From this study made of successful and
unsuccessful group leaders, using six stand-
ardized tests, there appears to be a signifi-
cant difference in the personality traits
between the two groups.

"In analyzing the eighteen personality
traits compositely, there is evidence that
the persons comprising the successful group
in this study in comparison with the indiv-
iduals making up the unsuccessful group have
attained a high degree of emotional maturity.

"Of the eighteen traits measured in this
battery, the successful group leader could be
differentiated from the unsuccessful group
leader in fourteen of the traits."

The studies mentioned above compare the performance of weak

and strong social service executives and group leaders in a number

of traits. This study aims to compare a specialized group; i.e.,

Y.M.C.A. Senior Secretaries with factors of their intelligence,

personal values, and interests.

The comparison of the professional performance of Y.M.C.A.

Senior Secretaries and their intelligence, personal values, and

interests is of interest to the National Council of Young Men's

Christian Associations, as evidenced by their cooperation in

the study. Other social agencies will be able to use the findings

in scrutinizing their selection procedures. Government agencies

and private industry interested in improving their supervisory

selection programs will be able to translate the findings for

use in their programs.

CHAPTER III

METHOD OF SOLUTION

The purpose of this study is to compare the professional performance ratings of Y.M.C.A. Senior Secretaries and their intelligence, personal values, and interests. This includes a determination of professional success by means of the Y.M.C.A. confidential Achievement Rating scale, measurement of intelligence by means of the Wonderlic Personnel Test, measurement of personal values with the Allport, Vernon, Lindzey "Study of Values," and measurement of interests with the Kuder Preference Record, Vocational Form CH.

This chapter discusses the procedures used in gathering the data; the measurement of the professional success of Y.M.C.A. Senior Secretaries; the measurement of intelligence, personal values, and interests; and a discussion of the comparisons of the test results with the professional success.

PROCEDURES USED IN GATHERING DATA

Definition of Senior Secretary

A Senior Secretary in the Y.M.C.A. is one who has completed all requirements for employment on a full time basis, as a completely qualified Secretary. To secure this title and be listed by the National Council of Young Men's Christian Associations, a person must complete his bachelor's degree from an accredited college. Thirty credit hours in specified subjects must be included or taken in

graduate work. In addition to the formal schooling, two years of full time employment must be served as a Junior Secretary in an accredited Y.M.C.A. Following this trial period, references are secured from six persons who have observed the work of the applicant, and, upon the recommendation of these six persons, the title of Senior Secretary is granted. The term indicates professional status rather than a specific position. Senior Secretaries generally specialize in the various options that the Y.M.C.A. offers, such as Boys' Secretary, Athletic Secretary, Adult Program Secretary, et cetera.

The Subjects Used

A sample of seventy-eight Y.M.C.A. Senior Secretaries employed on a full time basis was included in this study. This means that each person included in the study has served two years or more as a full time Y.M.C.A. Secretary, thus making possible an appraisal of his work. By using only Senior Secretaries, the study includes only those on whom performance ratings were on file.

All persons in the study were rated on the standard Y.M.C.A. "Confidential Achievement Rating" scale. Each Secretary was rated by at least six persons who had observed his work for two years or more.

Procedures Used in Collecting the Data

For some time the writer has been interested in whether there are any distinctive measurable qualities of people who have supervisory positions. The problem had been discussed with several industrial leaders, but it seemed to be extremely difficult to get them to cooperate on such a study.

The writer has been associated for some time with the Omaha Central Young Men's Christian Association in a part time staff capacity in Adult Program work. The problem was discussed with the Adult Program Secretary, and he recognized the need for such a study within the Young Men's Christian Association. He offered to assist in making the resources of the organization available. He immediately corresponded with the National Council of the Young Men's Christian Association, presenting the problem. The National Council evidenced interest in the study, authorized its conduct, and offered to cooperate in every way possible.

In collecting the data, geographical regions were chosen, and then various sizes of associations from within the regions were selected. It was decided to divide the associations into three groups: those employing one to two secretaries, three to nine secretaries, and those having ten and over. Table I illustrates the grouping and where the secretaries are located.

TABLE I

YOUNG MEN'S CHRISTIAN ASSOCIATIONS GROUPED BY SIZE

1 - 2 Senior Secretary Associations

Beatrice, Nebraska
Norfolk, Nebraska
Hannibal, Missouri
Lincoln, Nebraska
Salina, Kansas
Parsons, Kansas
McCook, Nebraska
Atchison, Kansas
Pittsburg, Kansas

3 - 9 Senior Secretary Associations

Colorado Springs, Colorado
Grand Rapids, Michigan
Des Moines, Iowa
Pensacola, Florida
Hamilton, Ohio
Phoenix, Arizona
Stamford, Connecticut

10 and Over Senior Secretary Associations

Dallas, Texas
Los Angeles, California
Minneapolis, Minnesota
Hartford, Connecticut
Omaha, Nebraska
St. Louis, Missouri
Joliet, Illinois

The next step was to send a letter to each of the selected associations explaining the purposes of the study and soliciting their cooperation. When the replies came back, they were all favorable. Meanwhile, the tests had been assembled in batteries and numbered with an identifying code. The batteries were mailed to the cooperating associations, together with a covering letter giving complete

instructions to the person administering the tests. Upon the return
of the completed batteries of tests, they were scored and entered in
tabular form.

The names of all the Senior Secretaries participating in the
study were then forwarded to the National Council of Young Men's
Christian Associations so that the necessary "Confidential Achieve-
ment Rating" scales could be prepared and returned. It is pertinent
to note that current "Confidential Achievement Rating" scales could
not be obtained on all who had been tested. Consequently, the
number of cases in the study is less than originally contemplated.
The original plans called for a study of one hundred cases. How-
ever, this final study covers seventy-eight cases. The "Confidential
Achievement Rating" profiles for each Senior Secretary were obtained
from the National Council. The National Council could not release
individual ratings, but they did average the ratings on each Senior
Secretary and the profile thus determined was used. There were
eleven averaged ratings; they were totaled, and this total was
used as the measure of professional performance for the Senior
Secretary concerned. These ratings ranged from 98.9 points for a
high to a low of 74.5. All Senior Secretaries were placed into
one of two groups: "More Successful" or "Less Successful" on the
basis of the ratings.

The mean rating for the "More Successful" group is 93.9;
whereas, the "Less Successful" group has a mean rating of 84.5.
Chart I shows a comparison between the mean ratings of the two
groups on each item of the "Confidential Achievement Rating"
scale.

CHART I

A Comparison of Professional Performance Ratings
Received by All Cases

1. Consider his ability to command confidence and respect through his personality

2. Consider how effectively he is able to meet the physical demands of his work; his reserve; his health regime

3. Consider his poise; his ability to remain calm under exacting responsibility; his self-control

4. Consider his success in proceeding with his work, without having to be told every detail; his ability to make and carry out practical suggestions for doing things in original and improved ways

5. Consider his alertness to discover and his ability to think through problems; his thoroughness; his power of analyzing situations

6. Consider his understanding of his position in relation to the program and purposes of the Y.M.C.A. as a whole, including an appreciation of the work of other departments

7. Consider the volume of work of standard quality he is able to accomplish.

8. Consider his ability to win and hold the cooperation and good will of the groups he serves, as well as his associates.

9. Consider his grasp of important social factors in the area he serves and his sense of the social significance of his work

10. Consider his all-around exemplification of genuine Christian character

11. Consider his understanding of the Y.M.C.A. as a World Movement and his appreciation of the significance of the Association's International and World Service programs

Item	8.5 / 7.6
1	8.5 ... 7.6
2	8.3 ... 7.6
3	8.5 ... 7.7
4	8.7 ... 7.6
5	8.3 ... 7.1
6	8.5 ... 7.5
7	8.6 ... 7.6
8	8.7 ... 7.8
9	8.3 ... 7.3
10	9.1 ... 8.6
11	8.5 ... 8.0

10 9 8 7 6 5 4 3 2 1

NOTE: The dotted......line represents the mean of the "More Successful" group
The dashes - - - represent the mean of the "Less Successful" group

MEASUREMENT OF PROFESSIONAL SUCCESS
OF SENIOR SECRETARIES

For this study the eleven elements of the "Confidential Achievement Rating" scale (see Appendix A), as completed by the supervisors of the Senior Secretaries being studied, were used as the measure of professional success. The "Confidential Achievement Rating" scale is used because it has been adopted by the National Council of Young Men's Christian Associations and is used in preparing personnel papers and taking personnel actions. Level of position and salary received by a Senior Secretary could have been chosen as a measure of professional success. No doubt, there are other measures of professional success; however, due to the various sizes of the associations represented in the study, it is considered that the "Confidential Achievement Rating" scale is the most objective measure.

MEASUREMENT OF INTELLIGENCE, PERSONAL VALUES,
AND INTERESTS OF SENIOR SECRETARIES

For the measurement of intelligence of the subjects in this study, the Wonderlic Personnel Test was selected. The Study of Values by Allport, Vernon, and Lindzey was used to measure personal values, and the Kuder Preference Record, Vocational Form CH, was selected to determine interests.

Measurement of Intelligence

The Wonderlic Personnel Test was selected for this measure. This test is designed for testing adults in business and industrial situations. It has been found useful as a selection instrument in

hiring and placing applicants and also as an indicator of future possibilities. It is an easy tool to use in that it requires only twelve minutes to take and with a minimum of direction and supervision. Wonderlic (7, p. 4) states, "The reliability of the test is as good as for longer tests." Comparing the results of one twelve minute test taken immediately after another gave correlations of .82 to .94, indicating good reliability. While the test author does not present specific data on validity in the manual, he says that this was proved in actual business situations. The test has been shown to be a valid instrument in determining success on a number of different jobs. Correlations between the Personnel Test and the Otis Test are from .81 to .87.

Measurement of Personal Values

The Study of Values by Allport, Vernon, and Lindzey was selected for this investigation. The Study of Values aims to measure the relative prominence of six basic values or motives in personality: theoretical, economic, aesthetic, social, political, and religious. Allport, Vernon, Lindzey (1, p. 3) state: " . . . The classification is based directly upon Edward Spranger's Types of Men, a brilliant work which defends the view that the personalities of men are best known through a study of their values or evaluative attitudes."

Reliability of the Study of Values seems to be satisfactory. The mean reliability coefficient, using a z transformation, was .89 which is considered to be fully adequate. Examination of the scores of groups whose characteristics are known provides evidence for the validity of the scale. This conclusion is made even though no specific comparable validity correlations are made by the authors.

The six basic values are described by Allport, Vernon, and

Lindzey (1, pp. 13-14) as follows:

> "1. The Theoretical - The dominant
> interest of the theoretical man is the dis-
> covery of truth. . . . The interests of the
> theoretical man are empirical, critical, and
> rational; he is necessarily an intellectualist,
> frequently a scientist or philosopher. . . .
>
> "2. The Economic - . . . characteris-
> tically interested in what is useful. . . .
> the practical affairs of the business world. . . .
>
> "3. The Aesthetic - . . . sees his
> highest value in form and harmony. Each
> single experience is judged from the standpoint
> of grace, symmetry, or fitness. . . .
>
> "4. The Social - The highest value for
> this type is love of people. . . . The social
> man prizes other persons as ends, and is there-
> fore himself kind, sympathetic, and unselfish.
>
> "5. The Political - . . . is interested
> primarily in power. His activities are not
> necessarily within the narrow field of politics.
>
> "6. The Religious - The highest value of
> the religious man may be called unity. He is
> mystical, and seeks to comprehend the cosmos as
> a whole, to relate himself to its embracing
> totality."

Measurement of Interests

The Kuder Preference Record, Vocational Form CH, was selected

for this study. This test aims to make a systematic approach to

the problem of vocational selection by isolating the broad fields

of interests. The test classifies interests in ten general areas

as follows:

0	Outdoor	5	Artistic
1	Mechanical	6	Literary
2	Computational	7	Musical
3	Scientific	8	Social Service
4	Persuasive	9	Clerical

The Kuder Preference Record, Vocational Form CH, is used chiefly in vocational counseling, employee counseling, and to motivate reading in fields of specific interests. In vocational counseling, the test is designed to point out occupations for further study and to verify a person's choice of an occupation. In employee counseling, the test can be useful in screening new employees and in impressing the placement of present employees. Various studies indicate that people work best in occupations they enjoy. Students can be encouraged to improve their reading skills when the reading material appeals to them. The test will help identify interesting reading material. This interest inventory was used in this study to determine the types of activities in which the Senior Secretaries are most interested.

Evidence has been collected which shows a relation between preference scores and factors of scholastic achievement, choice of occupations and curricula, general and special abilities, and job satisfaction. Varying correlations have been found, but all appear to be significant enough to consider the test valid.

Kuder (2, p. 20) concludes that reliabilities obtained from adults and high school students are fully satisfactory. They vary from a correlation of .84 to .93.

An individual's preferences indicates that he likes certain types of activities. The Preference Record classifies them into ten areas listed on page 15. In general, the areas are classified as explained in the following paragraphs:

The Outdoor refers to activity areas requiring working outdoors rather than indoors. Included in this scale are typical occupations ranging from the semi-skilled occupation of woodsman to its professional counterpart of forest ranger.

The Mechanical scale is designed to measure interests in mechanical activities. Typically included are the low skilled manual occupations to professional engineers.

The Computational scale aims to find interests in the occupational fields which require computational effort, such as bookkeeping, accounting, and the various business machine operation occupations.

The Scientific scale intends to measure interests in scientific activities. The scale is not limited to pure science but includes allied fields and scientific helpers.

The Persuasive scale aims to measure those activities in which the wielding of personal influence is important. Typical occupations are lawyers, advertisers, and auctioneers.

The Artistic scale measures interests in the activities requiring artistic talent of various kinds and degrees.

The Literary scale measures interests in the field of literature and acting.

The Musical scale measures interests in musical activities.

The Social Service scale measures interests in those activities requiring extensive dealings with other people ranging from personal service occupations, such as midwife and practical nurse to the professional occupations of clergyman and surgeon.

The Clerical scale measures interests in those occupations which are strictly clerical in nature, such as bookkeeping machine operator, general clerk, et cetera.

COMPARISON OF RATINGS OF PROFESSIONAL SUCCESS WITH
INTELLIGENCE, PERSONAL VALUES, AND INTERESTS OF SENIOR SECRETARIES

After all the scores had been obtained for each of the measures included in the battery of tests; that is, the Wonderlic Personnel

Test; the Study of Values by Allport, Vernon, and Lindzey; and the
Kuder Preference Record, Vocational Form CH, these scores were then
properly entered for each Senior Secretary participating in the
study. The Senior Secretaries had been separated into two groups,
"More Successful" and "Less Successful" on the basis of their pro-
fessional success as measured by the "Confidential Achievement
Rating" scale.

The two kinds of data, test scores and professional performance
results, were worked into tables for application of the "t" technique
(see Appendix B). The "t" technique method chosen was the difference
between two means (mean ratings of the "More Successful" and "Less
Successful" groups) - separate group variance - sample groups -
equal size as outlined by Wert, Neidt, and Ahmann (6, pp. 129-132).

The "t" value was obtained for the "More Successful" and the
"Less Successful" groups by use of the formula:

$$t = \frac{X_1 - X_2}{\sqrt{\frac{\sum x^2}{k_1(k_1-1)} + \frac{\sum x^2}{k_2(k_2-1)}}}$$

The $\sum x^2$ for each group was obtained from the formula

$$\sum x^2 = \sum x^2 - \frac{(\sum x)^2}{N}$$

The "t" values were then compared with the tabled values of "t" to
determine whether there existed significance at the 5 per cent level
for consequent rejection or non-rejection of the null hypothesis.

SUMMARY

The purpose of this study is to compare the professional performance of Y.M.C.A. Senior Secretaries and their intelligence, personal values, and interests.

The Senior Secretaries were divided into "More Successful" and "Less Successful" groups on the basis of ratings received on the Y.M.C.A. standard "Confidential Achievement Rating" scale.

Each Senior Secretary was given three tests: the Wonderlic Personnel Test; the Study of Values by Allport, Vernon, and Lindzey; and the Kuder Preference Record, Vocational Form CH. Each one thus had a score on each of the following characteristics:

1. Intelligence

2. Personal Values
   (a) Theoretical
   (b) Economic
   (c) Aesthetic
   (d) Social
   (e) Political
   (f) Religious

3. Interests
   (a) Outdoor
   (b) Mechanical
   (c) Computational
   (d) Scientific
   (e) Persuasive
   (f) Artistic
   (g) Literary
   (h) Musical
   (i) Social Service
   (j) Clerical

The mean scores of the "More Successful" and the "Less Successful" groups on each of the mentioned characteristics were compared by means of the "t" test.

CHAPTER IV

RESULTS

The problem undertaken in this study was to find if there is
a relationship between professional performance of Y.M.C.A. Senior
Secretaries and their intelligence, personal values, and interests.
One hundred and four test batteries and seventy eight of the
"Confidential Achievement Rating" scales were obtained. The study
was limited by the time involved by the National Council of Young
Men's Christian Associations in preparing the "Confidential
Achievement Rating" scales. Even with this problem involved, a
seventy-two per cent return was experienced.

In this chapter the following topics will be discussed:

1. Comparison of the intelligence of the
   "More Successful" and the "Less
   Successful" Senior Secretaries.

2. Comparison of the personal values of
   the "More Successful" and the "Less
   Successful" Senior Secretaries.

3. Comparison of the interests of the
   "More Successful" and the "Less
   Successful" Senior Secretaries.

INTELLIGENCE

This section presents a comparison of the intelligence of the
"More Successful" and the "Less Successful" Senior Secretaries.
The Wonderlic Personnel Test was used to measure intelligence.
Table II summarizes the results.

TABLE II

<u>Comparison</u> <u>of</u> <u>Intelligence</u> <u>of</u> <u>"More</u> <u>Successful"</u>
<u>and</u> <u>"Less</u> <u>Successful"</u> <u>Senior</u> <u>Secretaries</u>
<u>as</u> <u>Measured</u> <u>by</u> <u>the</u> <u>Wonderlic</u> <u>Personnel</u> <u>Test</u>

<u>Mean Raw Scores</u>		"t"
"More Successful"	"Less Successful"	
28.205	26.205	1.333

Value of "t" required for 5% level of significance is
1.991.

Table II may be used as follows: the mean raw score of the
"More Successful" group of Senior Secretaries on the Wonderlic
Personnel Test is 28.205; the mean raw score of the "Less Successful"
group is 26.205; the obtained value of "t" is 1.333.

Since the obtained value of "t" (1.333) is less than the value
of "t" required for the 5% level of confidence (1.991), it is seen
that there is not a significant difference between the average
intelligence of the "More Successful" and the "Less Successful"
Senior Secretaries as measured by the Wonderlic Personnel Test.
That is, the "More Successful" Senior Secretaries do not appear
to be more intelligent than the "Less Successful" ones.
Wonderlic (7, Table I, p. 6) indicates that a score of 28-29 com-
pares with a percentile ranking of 38.5 for males, ages 20-30, with
four years of college; and a score of 26-27 compares with a percentile
ranking of 24.0 for the same group. For all educational levels the
percentile ranking for the Wonderlic score of 26-27 is 67.3 and for
a score of 28-29 the ranking is 76.2.

PERSONAL VALUES

This section presents comparisons of the personal values of
the "More Successful" and the "Less Successful" Senior Secretaries.
The Allport, Vernon, and Lindzey Study of Values was used to measure
personal values. Table III summarizes the results.

TABLE III

Comparison of Personal Values of "More Successful"
and "Less Successful" Senior Secretaries
as Measured by the Allport, Vernon, Lindzey Study of Values

| Values | Mean Raw Scores | | "t" |
	"More Successful"	"Less Successful"	
Theoretical	37.744	38.026	0.181
Economic	38.077	37.154	0.627
Social	41.423	41.410	0.013
Political	40.141	37.718	1.742*
Religious	49.115	51.769	1.507
Aesthetic	33.500	33.923	0.275

Value of "t" required for 5% level of significance is 1.991

*Significant at 10% level of confidence

Table III may be read as follows: in the Theoretical area of
values the mean raw score of the "More Successful" group is 37.744;
the mean raw score of the "Less Successful" group is 38.026. The
value "t" - 0.181 is below the value "t" - 1.991 that is required
for significance at the 5% level of confidence. Since the obtained
value of "t" (0.181) is below the value of "t" required for the 5%
level of confidence (1.991), it is seen that there is not a signi-
ficant difference between the mean Theoretical scores of the

"More Successful" and the "Less Successful" Senior Secretaries. That is, neither group is significantly more inclined toward Theoretical values than the other.

It is to be seen that none of the "t's" listed in Table III are large enough to indicate differences that are significant at the 5% level of confidence. The value of "t" - 1.742 for the area of Political values is significant at the 10% level of confidence. While the difference between the two groups is not statistically significant in the strict sense, there is a suggestion that the "More Successful" Senior Secretaries tend to be more strongly oriented toward Political values than do the "Less Successful" ones. Allport, Vernon, Lindzey (1, p. 14) state:

> "The political man is interested primarily in power. His activities are not necessarily within the narrow field of politics. . . . Leaders in any field generally have high power value. Since competition and struggle play a large part in all life, many philosophers have seen power as the most universal and the most fundamental of motives. . . ."

There appears to be no significant difference between "More Successful" and "Less Successful" Senior Secretaries in their orientation toward Theoretical, Economic, Social, Aesthetic, and Religious values.

INTERESTS

This section presents comparisons of the interests of the "More Successful" and the "Less Successful" Senior Secretaries. The Kuder Preference Record was used to measure interests. Table IV summarizes the results.

TABLE IV

Comparison of Interests of "More Successful"
and "Less Successful" Senior Secretaries
as Measured by the Kuder Preference Record

| Interests | Mean Raw Scores | | "t" |
	"More Successful"	"Less Successful"	
Outdoor	37.487	40.051	0.842
Mechanical	31.128	34.179	1.093
Computational	23.897	22.051	0.719
Scientific	31.308	31.487	0.080
Persuasive	51.333	44.282	2.259*
Artistic	18.231	22.923	2.374*
Literary	23.128	18.564	2.645**
Musical	11.308	14.051	2.170*
Social Service	61.179	58.436	1.205
Clerical	39.821	41.333	0.541

Value of "t" required for 5% level of significance is 1.991

Value of "t" required for 1% level of significance is 2.641

*Significant at 5% level of confidence

**Significant at 1% level of confidence

Table IV may be read as follows: in the Outdoor interest the
mean raw score of the "More Successful" group is 37.487; the mean
raw score of the "Less Successful" group is 40.051. The value of
"t" - 0.842 is below the value "t" - 1.991 that is required for
significance at the 5% level of confidence. Since the obtained value
of "t" (0.842) is below the value of "t" required for the 5% level
of confidence (1.991), it is seen there is not a significant differ-
ence between the mean Outdoor scores of the "More Successful" and
the "Less Successful" Senior Secretaries. That is, neither group
is significantly more inclined toward outdoor interests than the
other.

It is also to be seen that the "t's" listed in Table IV for the Mechanical, Computational, Scientific, Social Service, and Clerical interests are not large enough to indicate differences that are significant at the 5% level of confidence. The "t" values of 2.259 for Persuasive, 2.374 for Artistic, 2.645 for Literary, and 2.170 for Musical interests are significant at the 5% level of confidence. That is, the "More Successful" Senior Secretaries appear to be more interested in Persuasive and Literary activities than are the "Less Successful" Secretaries. The "Less Successful" Secretaries appear to be more interested in Artistic and Musical activities than are the "More Successful" Secretaries. There appear to be no significant differences in the interests of the "More Successful" and "Less Successful" Senior Secretaries in Outdoor, Mechanical, Computational, Scientific, Social Service, and Clerical activities.

SUMMARY

The purpose of this study is to compare the professional performance of Y.M.C.A. Senior Secretaries and their intelligence, personal values, and interests.

The Senior Secretaries were divided into two groups on the basis of their professional performance as achieved on the "Confidential Achievement Rating" scale; that is, the "More Successful" and the "Less Successful."

Intelligence was measured by the Wonderlic Personnel Test, and no significant difference was found between the two groups.

Personal values were measured by the Allport, Vernon, and Lindzey Study of Values with the result that no significant

difference was found between the "More Successful" and the "Less Successful" groups in the values of Theoretical, Economic, Social, Religious, and Aesthetic. A difference approaching statistical significance (Significant at the 10% level of confidence) in Political values suggests that "More Successful" Senior Secretaries tend to desire and work for personal power more than do "Less Successful" ones.

Interests were measured by the Kuder Preference Record with the result that no significant difference was found between the "More Successful" and the "Less Successful" groups in the Outdoor, Mechanical, Computational, Scientific, Social Service, and Clerical activities. The Persuasive and Literary activities are statistically significant at the 5% level; the "More Successful" Senior Secretaries were interested in these activities. Significance is also found at the 5% level of confidence for the Artistic and Musical interests; however, in these activities the "Less Successful" Senior Secretaries have higher mean scores than the "More Successful" ones.

CHAPTER V

SUMMARY AND CONCLUSIONS

This chapter presents a summary of: the purpose of this
study; the methods used in the study; the results and the conclu-
sions drawn from the results; suggestions for future research.

PURPOSE

The purpose of this study was to measure the relationship, if
any, between the professional performance of Y.M.C.A. Senior
Secretaries and factors of their intelligence, personal values,
and interests.

METHODS

Seventh-eight Senior Secretaries in twenty-three Young Men's
Christian Associations of varying sizes were included in this study.
The study was nationwide in scope, the associations were geographi-
cally dispersed, and they were of varying sizes.

The Wonderlic Personnel Test was selected to measure intelli-
gence. The Study of Values by Allport, Vernon, and Lindzey was
selected to measure personal values. Interests were determined by
the Kuder Preference Record. Professional Success was measured by
the National Council of Young Men's Christian Associations' "Confi-
dential Achievement Rating" scale. The tests were assembled in
one battery with instructions to the persons administering the

tests and forwarded to the Y.M.C.A. selected for study. The tests were administered and returned to the writer for scoring, tabulation, and study.

The National Council of Young Men's Christian Associations tabulated the "Confidential Achievement Rating" scales on all the Senior Secretaries included in the study. Professional performance was determined on the basis of these scales, and the total ratings were divided into two groups: the "More Successful" and the "Less Successful." The "t" technique was applied to find the relationship between the test results of the "More Successful" and the "Less Successful" Senior Secretaries.

RESULTS

1. The "More Successful" Senior Secretaries tend to be more interested in literary activities than are the "Less Successful" Secretaries (1% level of confidence.).

2. The "More Successful" Senior Secretaries tend to be more interested in persuasive activities than are the "Less Successful" Secretaries (5% level of confidence).

3. The "Less Successful" Senior Secretaries tend to be more interested in artistic activities than are the "More Successful" Secretaries (5% level of confidence).

4. The "Less Successful" Senior Secretaries tend to be more interested in musical activities than are the "More Successful" Secretaries (5% level of confidence).

5. There is a very slight suggestion, not significant in the statistical sense, that the "More Successful" Senior Secretaries are

more interested in having power over others than the "Less Successful"
Secretaries (10% level of confidence).

The traits on which significance was found implies that a dis-
tinct difference does exist between "More Successful" and "Less
Successful" Senior Secretaries. These were all on the Kuder Preference
Record in the interests of Persuasive, Artistic, Literary, and Musical
activities. The "More Successful" Senior Secretaries tend to be more
interested in Persuasive and Literary activities and less interested
in Artistic and Musical activities than the "Less Successful" ones.

Perhaps the nature of his work requires a successful Y.M.C.A.
Senior Secretary to be persuasive. He is required to organize, plan,
and control for a variety of groups of people, both organized and
unorganized. The fact that the "More Successful" Senior Secretaries
tend toward Political values on the Study of Values, seems to be re-
lated to the Persuasive interest. The great interest of the "More
Successful" Senior Secretaries in Literary interests (found to be
significant at the 1% level of confidence) is more closely related
to the Persuasive and Political interests than it first appears to
be. It may be that extensive reading and a deep interest in it is
why the successful Secretary is really successful.

SUGGESTIONS FOR FURTHER RESEARCH

It is self-evident that more research needs to be done in the
field of psychological testing to ascertain whether tests can be suc-
cessfully used to predict whether an incoming Y.M.C.A. Secretary will
be a successful one. This proposition implies that the research could
well result in the selection and use of a battery of tests to select
Y.M.C.A. Secretaries, and thus eliminate the candidates who are
potentially weak.

The "Confidential Achievement Rating" scale used to measure
job performance of the Y.M.C.A. Secretary is the currently accepted
way of measuring how well the Secretary performs. The "Confidential
Achievement Rating" scale has never been validated and, consequently,
lends itself to research. Closely assocated with this problem, the
opportunity for research presents itself in the use of some other
criteria for job success. The attributes possessed by those who
remain with the Association until retirement as compared with the
attributes of those who leave the Association early in their employ-
ment would make an interesting study.

The "More Successful" Senior Secretaries being more interested
than the "Less Successful" one in Literary activities at the 1%
level of confidence suggests that research into the reading habits
of Y.M.C.A. Secretaries would be interesting and worthwhile.

The data collected in this study could be used for further
research. An interesting research problem would be to compare the
professional performance of the top one-third with that of the
bottom one-third. Obviously, there are other statistical techniques
which could be appropriately applied to the data produced by this
study.

From a practical viewpoint, it is considered that this study
is an important one. The Young Men's Christian Association is
international in scope and has an extremely important role in
social service activities. Senior Secretaries are the recognized
leaders in the Y.M.C.A. movement, and in the communities where
Y.M.C.A.'s are located the Secretaries have a desirable influence
on the people within the communities. This study with its

significant findings will appeal to other social agencies, govern-
mental bodies, and private industry in studying what traits are
possessed by their executives, managers, and other supervisory
personnel. With the emphasis today on human relations, the selection
of people who supervise the efforts of others is very important.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Allport, Gordon W.; Philip E. Vernon; and Gardner Lindzey, Study of Values. A Scale for Measuring the Dominant Interests in Personality; Manual of Instructions, Boston, Massachusetts: Houghton-Mifflin Co., 1951.

2. Examiner's Manual for the Kuder Preference Record, Vocational Form CH, Science Research Associates, 57 West Grand Ave., Chicago 10, Illinois, 1951. G. Frederick Kuder.

3. Flannigan, Mary E., A Study of Personality and Interest Traits of Successful and Unsuccessful Group Work Leaders Using Six Standardized Tests, Unpublished Master's Thesis, University of Omaha, Omaha, Nebraska, 1951.

4. Hamlin, Richard E., Personality Inventory Study of Y.M.C.A. Adult Program Secretaries, Unpublished Master's Thesis, University of Omaha, Omaha, Nebraska, 1952.

5. Selecting Supervisors, U. S. Civil Service Commission, Washington, D. C., p. 1, 1951.

6. Wert, Neidt, and J. Stanley Ahmann, Statistical Methods in Educational and Psychological Research. New York: Appleton-Century-Crofts, Inc., 1954, pp. 129-132.

7. Wonderlic, E. F., Manual, Wonderlic Personnel Test, 750 Grove West, Glencoe, Illinois, 1945.

APPENDIX A

August 11, 1953

Dear_____:

    We are now working on a little project that is right down your "alley" and it should be very interesting to you. We hope very much that you will be able to help us with it and actually all it will take is about one and one-half hours of your time. The results of this project should be beneficial not only to your Association but to the entire movement.

    Cecil McGee and myself, from Omaha, are cooperating on a national study in the field of personnel. Our plan has received the blessing and cooperation of Dick Lancaster and Clifford Carey from our national staff, and we are working closely with them so that our final results will be usable by the entire Y.M.C.A. The plan is to check the relationship between job success or failure and the intelligence, personality, and interests of Y.M.C.A. Secretaries. We will use the Wonderlic Intelligence Test, the Allport-Vernon Study of Values (personality), and the Kuder Vocational Interest Test. It will be necessary to give this brief battery of tests to 100 "Y" Secretaries across the nation. Fifty of these men will come from Associations employing more than ten secretaries; 25 of the men will be from one and two men staffs, and the balance will come from some other small Associations. We propose to have five large Associations give the battery of tests to ten Secretaries. If the ten men can be assembled at one time, the job can be done in about one hour and twenty minutes. We would like for St. Louis to be one of the five larger Associations, and we are in hopes that you will take the responsibility of administering the tests. Each of these tests may be given quite easily, and complete instructions will accompany them. We will send you everything that is necessary to complete the job and actually, it will not be too difficult if you can figure a way to get ten of your men together at one time. That's all there is to it, as the ratings of the men will be taken from the Area and National files.

    Please let me know if you can help us on this project and we will forward you the tests sometime during September. The study results will be mailed to all participating Associations and might be of value to you in the future selection of men.

                        Sincerely,

November 19, 1953

Dear_____:

    Ten batteries of tests w ere forwarded to you today for use
with Senior Secretaries on your Los Angeles staff. There is a s et
of complete instructions with each battery of tests; however, the
instructions should be considered by yourself or the director of
your counseling program before showing them to the individuals
that will participate in the study. Whoever administers the tests
should go over them c arefully prior to administration of the tests,
and I'm sure you'll have no difficulty.

    Each battery of three tests is numbered and the three tests
taken by any one individual should bear the same number. After
the tests have been administered, all you have to do is ship them
back to us for grading and reporting. Be sure that each person
taking the tests signs his name to each of them. I hope that
you'll be able to have them completed in the near future, as I
only purchased 25 of the Kuder manuals; therefore, I can only
have 25 batteries out at one time, and must wait until they return
to proceed with additional associations.

    One final request, please ask each of your men to write under
his name on the Wonderlic Test the last year that he has completed
in college. We are toying with the idea of relating education to
job success along with the other items.

    Thank you very much for your help on this matter. I know
that it is a lot of trouble and something you would just as soon
not do. However, if the findings are significant, maybe it will
be worthwhile, and maybe it will help us to do a better job of
selection in the future.

                                    Sincerely,

YMCA NATIONAL STUDY
JOB PERFORMANCE OF YMCA SECRETARIES
RELATED TO FACTORS OF THEIR INTELLIGENCE, PERSONALITY, AND INTERESTS

Mr. Secretary:

Thank you for indicating that you will cooperate with this study. Your participation will do the following things;

1. It will give you an opportunity to obtain an objective evaluation of your staff members.

2. It will help the National YMCA analyze measuring devices for selecting YMCA Secretaries.

3. The study will add to the field of scientific research by identifying what characteristics are inherent in the field of leadership.

This study will attempt to find the differences, if any, between the varying degrees of success of YMCA Senior Secretaries and factors of their intelligence, personality, and interests.

You will contribute to this study by administering the easily given battery of tests.

Steps to follow:

1. Read all instructions personally and look at tests so that you understand the plan, before meeting with persons that are to takethe tests.

2. Give each person that is to take the tests a test packet. Caution them not to open the Wonderlic Test.

3. Have them sign their full names on the outside of each test.

4. Proceed with the tests following carefully the instructions for each one.

5. All tests can be given to several persons at one time.

6. Take up the tests as each is completed. Check to see that each is signed. Forward completed tests to:
            Al Hummel, Asst. Gen. Secy.,
            Downtown Y.M.C.A.,
            17th and Harney Streets,
            Omaha, Nebraska.

7. Use pencil for Wonderlic Test and Allport-Vernon Test, as corrections are permissible.

INFORMATION AND INSTRUCTIONS FOR ADMINISTERING BATTERY OF TESTS

Wonderlic Personnel Test

NOTE: — This is a time test. Persons taking this test should not look at the questions until instructions have been given and the timer says start.

After passing out the test, the examiner says, "Read the first page carefully and work the sample problems. Do not turn the page until you are told to do so." After those being tested have had an opportunity to work each of the samples and read all the directions on the first page, the examiner should ask if everyone understands the way in which they are to work. He then says, "You will have exactly 12 minutes in which to answer as many problems as you can. You probably will not be able to finish all of them. Work as carefully as you can, but do not spend too much on any one problem. I will stop you at the end of 12 minutes. Begin now!" Use stop watch or a watch with sweep second hand. Write down the starting and stopping time. Any variation on time voids this test.

In addition to these directions, some examiners find it helpful to read aloud the paragraph of instructions on the first page of each form, which begins, "The test contains 50 questions . . . Do not spend too much time on any one problem . . ."

After those taking the test begin working, they are not to be interrupted until exactly 12 minutes have elapsed. At the end of 12 minutes, all papers are collected for scoring.

Study of Values

A. The Study of Values is self-administering. It is not absolutely necessary to give verbal instructions to the persons; however, special caution regarding one feature of Part I and one feature of Part II should be given. In Part I, three points are to be divided for each question between Item A and Item B as you choose—0-3, 1-2, 2-1, or 3-0. In Part II the first choices (highest value judgment) should be given a score of 4, the lowest a score of 1. There are four items to be rated for each question in Part II, all four must be given a score—4-3-2-1. See instructions.

B-1. It is advisable to give Part I first and let the person or persons taking the test complete Part I before talking about Part II. Therefore, have all concerned read instructions together for Part I (on the cover). Discuss instructions and be sure everyone understands them. They may now proceed to answer items in Part I.

B-2. There is no time limit.

B-3. <u>Every</u> <u>question</u> <u>must</u> <u>be</u> <u>answered</u> as per instructions.

When all have completed Part I, read together instructions for Part II on page 6. Discuss instructions and complete test.

<u>Kuder Preference Record, Vocational Form CH</u>

1. The test is self-administering. Directions explaining how to mark the answers are given in the test booklet. Persons taking the test are given copies of the booklet and told to read the directions. Have everyone read instructions and then ask for questions or discussion. Be sure everyone understands the method of correcting errors and importance of punching clean deep holes. They then proceed to mark their preferences for the various activities.

2. There is no time limit.

3. The person administering the test should watch the subjects carefully during the first few minutes to see that the pins are being used correctly, and to make sure that each subject is marking one first choice and one last choice in each group of 3 activities.

TABLE V

PROFESSIONAL PERFORMANCE RATINGS

"More Successful" Group

Code	Items											Total
	1	2	3	4	5	6	7	8	9	10	11	
71	9.2	9.4	8.0	8.0	6.8	7.2	8.0	9.4	6.8	9.0	8.2	90.0
49	8.6	8.6	9.3	8.6	8.7	9.3	8.9	8.9	9.0	9.7	9.3	98.9
115	9.0	9.4	8.7	8.7	8.3	8.7	8.9	9.0	7.9	9.4	8.6	96.6
69	8.9	8.2	8.6	9.2	8.6	8.5	9.1	9.0	8.1	8.9	8.9	96.0
100	8.8	9.1	8.4	8.8	8.3	8.3	9.0	8.6	8.2	9.4	9.0	95.9
95	8.7	8.4	9.0	9.1	8.7	8.8	8.8	8.1	8.5	9.0	8.7	95.8
47	8.2	8.5	9.2	9.0	9.0	8.6	8.2	8.8	8.4	9.2	8.6	95.7
61	8.3	7.3	8.5	9.1	8.4	8.4	9.0	9.0	8.9	9.6	8.9	95.4
124	8.4	8.9	9.0	9.0	8.6	8.9	8.6	8.9	8.1	8.1	8.1	94.6
126	8.5	8.1	8.1	8.6	8.8	8.1	8.9	8.5	8.5	9.3	9.0	94.4
89	9.2	7.2	9.2	8.7	8.5	7.8	8.3	8.7	8.2	9.3	9.0	94.1
11	8.2	8.6	8.8	8.8	8.2	8.4	8.8	8.8	8.0	8.8	7.8	93.2
8	9.2	8.4	8.4	7.6	6.2	9.0	8.8	8.8	8.8	9.4	8.3	92.9
23	9.0	8.2	7.8	8.8	8.3	8.0	8.5	8.7	8.3	9.0	7.7	92.3
104	8.6	9.1	8.1	8.3	7.8	7.5	8.3	8.6	8.3	8.9	8.6	92.1
97	7.9	8.7	8.4	8.8	8.0	8.0	8.1	8.4	8.2	9.0	8.5	92.0
58	8.4	7.8	8.0	8.4	7.9	8.1	8.5	8.9	7.8	9.4	8.6	91.8
111	8.6	8.2	8.4	8.4	7.2	8.0	8.0	8.6	7.8	9.0	8.4	90.6
116	8.2	8.3	8.0	8.5	8.2	7.8	8.2	8.2	7.5	9.0	8.6	90.5
60	8.4	8.4	8.4	7.9	7.9	8.1	8.4	8.4	7.6	8.4	8.1	90.0
32	8.0	8.7	9.0	9.1	8.7	8.3	9.0	8.6	7.6	9.0	8.8	94.8
81	9.0	8.3	8.2	8.8	8.0	8.5	8.7	9.0	7.7	9.3	8.6	94.1
119	8.2	6.6	6.8	9.2	8.8	9.4	8.4	8.2	8.4	9.2	9.2	92.4
29	8.6	7.8	8.2	8.6	7.8	8.4	8.4	8.8	8.0	8.4	8.2	91.2
27	8.6	8.0	8.7	8.5	8.7	9.0	9.3	8.6	8.9	9.1	9.3	96.7
52	8.5	6.8	9.0	8.8	8.0	8.5	8.4	8.8	8.2	9.5	8.7	93.2
105	8.2	8.0	8.8	9.0	9.5	8.8	9.0	8.8	8.8	9.2	9.0	97.1
92	8.8	8.3	8.8	9.2	8.5	9.0	8.8	9.0	9.2	9.0	9.3	97.9
90	8.8	6.8	8.3	8.9	8.7	8.9	8.8	8.8	8.7	9.1	8.9	94.7
74	8.5	8.2	8.5	8.3	7.0	7.5	8.0	8.8	7.8	9.0	8.6	90.2
75	8.3	8.7	7.9	8.6	8.7	8.7	9.0	8.6	8.2	9.3	8.7	94.7
158	8.0	9.3	7.6	8.8	8.0	8.0	8.6	8.3	8.3	8.9	8.7	92.5
157	8.0	8.1	8.2	8.7	8.4	8.6	8.9	8.8	8.3	8.7	8.2	92.9
152	8.0	9.7	8.2	9.2	9.0	9.2	9.0	8.4	7.8	9.1	9.1	96.7
51	8.3	9.0	9.3	8.4	8.3	8.6	8.0	8.6	8.6	9.5	8.6	95.2
94	7.6	8.3	8.1	9.1	9.3	8.7	8.4	8.1	8.9	9.3	9.4	95.2
118	8.5	9.0	8.8	9.0	8.8	9.3	9.8	9.0	8.8	9.3	8.9	99.2
7	8.6	6.8	8.0	8.8	7.8	8.3	8.2	8.6	7.8	9.0	8.8	90.7
156	7.6	8.6	8.7	8.1	7.6	8.7	8.7	9.3	7.9	9.4	9.1	93.7
Total	330.4	323.8	329.4	339.4	322.0	329.9	336.7	339.4	320.8	355.1	339.0	3665.9
$\bar{X}$	8.5	8.3	8.5	8.7	8.3	8.5	8.6	8.7	8.3	9.1	8.5	

TABLE VI

PROFESSIONAL PERFORMANCE RATINGS

"Less Successful" Group

Code					Items							Total
	1	2	3	4	5	6	7	8	9	10	11	
50	8.2	9.0	8.6	8.4	7.8	7.2	8.4	8.4	7.2	8.4	7.5	89.1
4	8.2	8.2	8.4	8.6	7.2	7.5	7.5	8.6	8.4	9.2	6.8	88.6
101	8.1	8.9	6.7	8.7	7.1	7.4	9.0	7.6	8.7	8.4	7.5	88.1
70	8.4	8.1	7.1	8.3	7.6	7.8	8.5	8.1	7.3	8.5	8.1	87.8
85	8.3	8.3	7.6	7.7	7.6	8.2	8.4	8.3	7.4	8.5	7.3	87.6
34	7.8	8.3	7.6	8.0	7.0	7.5	8.4	8.0	7.4	8.4	8.4	86.8
56	7.8	7.7	7.6	7.7	7.1	7.8	7.4	7.9	8.0	8.9	8.4	86.3
57	8.2	7.2	7.7	8.3	7.3	7.8	7.3	7.7	7.7	7.8	9.2	86.2
59	7.8	7.7	8.0	8.3	7.8	7.2	7.7	8.0	7.7	8.7	7.2	86.1
67	7.7	7.8	7.7	7.2	6.7	8.2	7.5	7.8	7.7	8.8	8.8	85.9
31	7.6	7.3	7.4	7.5	7.1	8.4	8.1	8.0	8.3	8.0	8.1	85.8
64	7.6	8.5	7.4	7.7	6.7	7.3	7.8	7.8	7.4	9.0	8.2	85.4
53	8.0	7.9	7.3	7.9	7.1	7.1	7.4	8.5	7.3	9.0	7.9	85.4
98	7.7	8.5	8.2	7.0	6.8	7.3	7.8	8.3	7.2	8.2	7.5	84.5
24	7.6	8.7	6.9	8.0	6.8	7.6	7.9	7.6	6.8	8.8	7.6	84.3
22	6.7	7.4	9.7	7.3	6.5	7.3	7.3	6.7	6.9	8.9	8.4	83.1
41	7.2	7.3	7.5	7.0	7.0	7.7	7.3	7.8	7.3	9.0	8.0	83.1
72	6.3	6.5	7.2	7.8	7.0	8.7	7.7	7.5	7.3	8.2	8.2	82.4
102	7.4	8.6	8.4	7.3	6.4	7.1	7.1	7.5	6.6	8.3	7.4	82.1
1	7.8	6.3	8.3	8.3	8.3	6.5	7.3	8.0	8.0	9.3	8.7	86.8
21	7.3	6.7	7.8	7.7	6.0	7.2	7.0	7.3	7.2	8.8	8.2	81.2
117	7.1	8.1	7.6	6.7	6.6	6.4	6.6	7.4	7.1	8.1	6.9	78.6
37	6.4	6.7	6.9	7.3	6.4	6.4	7.3	7.0	6.6	6.6	6.9	74.5
112	8.4	7.4	8.1	8.2	8.1	7.4	8.3	8.6	7.6	8.6	7.6	88.3
3	7.3	6.0	7.8	7.3	7.0	8.0	7.3	7.8	7.5	9.0	8.5	83.5
10	7.4	7.9	7.6	7.0	6.9	8.3	7.0	8.0	7.9	8.1	7.6	83.7
9	7.1	8.0	6.6	8.4	7.1	7.6	8.1	7.4	7.7	8.1	9.1	85.2
113	9.0	8.0	8.4	7.6	7.4	8.0	7.8	8.4	7.0	9.2	8.6	89.4
55	7.5	8.1	8.3	5.8	7.1	7.3	6.5	7.3	7.8	9.4	7.6	82.7
99	8.1	8.4	7.3	7.8	7.5	7.2	7.8	7.7	7.5	8.6	7.8	85.7
86	8.3	7.3	7.6	7.4	7.1	8.0	8.3	8.1	7.4	9.3	7.3	86.1
44	7.1	7.6	7.3	6.9	6.3	6.9	7.0	6.8	7.0	8.4	7.3	78.6
73	6.9	3.8	7.4	7.4	6.3	7.3	6.6	6.9	6.8	8.4	8.2	76.0
40	7.8	7.6	8.6	7.0	6.8	7.8	7.6	8.6	7.2	8.4	8.4	85.8
91	8.0	7.7	6.9	7.4	7.0	7.7	8.0	8.7	7.2	9.0	8.0	85.6
64	7.3	7.9	8.5	7.3	6.6	7.3	7.4	7.3	5.5	8.7	7.3	81.1
84	6.9	7.8	8.1	5.9	5.7	7.2	6.4	6.9	6.7	8.8	8.5	78.9
35	7.3	7.9	7.4	9.2	8.6	8.0	8.0	7.6	8.0	8.7	8.9	89.6
106	7.4	7.8	7.7	8.0	8.0	8.4	7.2	7.6	7.1	9.2	8.6	87.0

Total

297.0 298.9 301.2 297.3 275.4 294.0 296.0 303.5 287.4 335.7 310.5 3296.9

$\bar{X}$ 7.6 7.6 7.7 7.6 7.1 7.5 7.6 7.8 7.3 8.6 8.0

APPENDIX B

Copy of

Profile Summary of

CONFIDENTIAL ACHIEVEMENT RATING

1. Consider his ability
to command confidence
and respect through
his personality.

| Marked | Partially Successful | Creates distrust |

2. Consider how effectively
he is able to meet the
physical demands of his
work; his reserve; his
health regime.

| Exceptionally healthy | Good health | Of Average health | Low Vitality | Frequently incapacitated |

3. Consider his poise; his
ability to remain calm under
exacting responsibility;
his self-control.

| Always well poised | Generally well controlled | Easily Excitable | Irresponsible |

4. Consider his success in
in proceeding with his
work without having to
be told every detail;
his ability to make and
carry out practical suggestions for doing things
in original and improved
ways.

| Highly self-reliant and resourceful | Does what is expected | Needs constant direction |

5. Consider his alertness
to discover and his
ability to think
through problems; his
thoroughness; his
power of analyzing
situations.

| Exceptionally alert and thorough | Quite alert and through | Slow to find solution of problem | Dull |

6. Consider his understanding of his position
in relation to the program
and purposes of the Y.M.C.A.
as a whole, including an
appreciation of the work of
other departments.

| Expert | Thorough | Fair Grasp | Meager | Lacking |

7. Consider the volume of work of standard quality he is able to accomplish.

Highly satisfactory		Satis-factory	Fair	Limited	Very un-satisfactory

8. Consider his ability to win and hold the cooperation and goodwill of the groups he serves, as well as his associates.

Unusually successful		Moderately successful		Limited	Unsuccessful

9. Consider his grasp of important social factors in the area he serves and his sense of the social significance of his work.

Expert		Quite Keen		Moderately appreciative		Slightly appreciative	Socially blind

10. Consider his all-round exemplification of genuine Christian character.

Consistently exemplifies highest standard		Ordinarily exemplifies high standard		Conforms to usual standards		Generally inconsistent

11. Consider his understanding of the Y.M.C.A. as a World Movement and his appreciation of the significance of the Association's International and World Service programs.

Active Interest		Good Understanding		Limited		Lacking

WONDERLIC

	"More Successful"				"Less Successful"		
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	22	484	91	85.6	26	676
56	93.7	11	121	112	88.3	30	900
11	93.2	34	1156	3	83.5	23	529
8	92.9	18	324	64	81.1	24	576
32	94.8	31	961	35	89.6	38	1444
124	94.6	29	841	84	78.9	22	484
126	94.4	42	1764	10	83.7	24	576
81	94.1	21	441	9	85.2	35	1225
119	92.4	31	961	106	87.0	40	1600
49	98.9	31	961	113	89.4	21	441
115	96.6	32	1024	50	89.1	31	961
69	96.0	21	441	4	88.6	18	324
100	95.9	34	1156	55	82.7	34	1156
47	95.7	33	1089	99	85.7	24	576
61	95.4	23	529	86	86.1	17	289
89	94.1	28	784	101	88.1	25	625
95	95.8	30	900	1	86.8	26	676
104	92.1	30	900	70	87.8	20	400
58	91.8	20	400	85	87.6	21	441
111	90.6	20	400	34	86.8	21	441
116	90.5	24	576	56	86.3	33	1089
97	92.0	33	1089	57	86.2	33	1089
23	92.3	21	441	59	86.1	35	1225
94	95.2	24	576	31	85.8	26	676
29	91.2	36	1296	67	85.9	20	400
27	96.7	33	1089	64	85.4	34	1156
52	93.2	20	400	53	85.4	24	576
105	97.1	38	1444	24	84.3	23	529
92	97.9	29	841	22	83.1	25	625
90	94.7	21	441	41	83.1	25	625
74	90.2	36	1296	72	82.4	24	576
75	94.7	44	1936	102	82.1	30	900
158	92.5	21	441	98	84.5	16	256
157	92.9	27	729	21	81.2	18	324
152	96.7	37	1369	117	78.6	25	625
51	95.2	31	961	37	74.5	27	729
60	90.0	23	529	44	78.6	28	784
118	99.2	28	784	73	76.0	18	324
7	90.7	33	1089	40	85.8	38	1444
		1100	32,964			1022	28,292

$\bar{X}_1$	28.205			$\bar{X}_2$	26.205	
$\sum X_1$	1100			$\sum X_2$	1022	
$\sum X_1^2$	32,964			$\sum X_2^2$	28,292	
$\sum x_1^2$	1838.359			$\sum x_2^2$	1510.359	

t value = 1.333

THEORETICAL

	"More Successful"				"Less Successful"		
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	36	1296	91	85.6	28	784
156	93.7	42	1764	112	88.3	33	1089
11	93.2	44	1936	3	83.5	40	600
8	92.9	43	1849	64	81.1	43	1849
32	94.8	47	2209	35	89.6	40	1600
124	94.6	40	1600	84	78.9	36	1296
126	94.4	34	1156	10	83.7	31	961
81	94.1	36	1296	9	85.2	40	1600
119	92.4	25	625	106	87.0	36	1296
49	98.9	51	2601	113	89.4	37	1369
115	96.6	26	676	50	89.1	30	900
69	96.0	40	1600	4	88.6	41	1681
100	95.9	42	1764	55	82.7	35	1225
47	95.7	34	1156	99	85.7	34	1156
61	95.4	33	1089	86	86.1	28	784
89	94.1	37	1369	101	88.1	36	1296
95	95.8	51	2601	1	86.8	35	1225
104	92.1	35	1225	70	87.8	41	1681
58	91.8	57	3249	85	87.6	47	2209
111	90.6	27	729	34	86.8	28	784
116	90.5	34	1156	56	86.3	43	1849
97	92.0	38	1444	57	86.2	45	2025
23	92.3	44	1936	59	86.1	43	1849
94	95.2	29	841	31	85.8	34	1156
29	91.2	26	676	67	85.9	38	1444
27	96.7	40	1600	64	85.4	44	1936
52	93.2	45	2025	53	85.4	38	1444
105	97.1	30	900	24	84.3	42	1764
92	97.9	32	1024	22	83.1	37	1369
90	94.7	37	1369	41	83.1	43	1849
74	90.2	32	1024	72	82.4	38	1444
75	94.7	42	1764	102	82.1	49	2401
158	92.5	39	1521	98	84.5	37	1369
157	92.9	39	1521	21	81.2	35	1225
152	96.7	35	1225	117	78.6	35	1225
51	95.2	31	961	37	74.5	39	1521
60	90.0	32	1024	44	78.6	40	1600
118	99.2	39	1521	73	76.0	46	2116
7	90.7	48	2304	40	85.8	38	1444
		1472	57,626			1483	57,915

$\bar{X}_1$	37.744		$\bar{X}_2$	38.026
$\sum X_1$	1472		$\sum X_2$	1483
$\sum X_1^2$	57,626		$\sum X_2^2$	57,915
$\sum x_1^2$	2067.436		$\sum x_2^2$	1522.974

t value = 0.181

ECONOMIC

"More Successful"				"Less Successful"			
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	33	1089	91	85.6	39	1521
56	93.7	46	2116	112	88.3	39	1521
11	93.2	38	1444	3	83.5	35	1225
8	92.9	39	1521	64	81.1	40	1600
32	94.8	39	1521	35	89.6	34	1156
124	94.6	43	1849	84	78.9	45	2025
126	94.4	42	1764	10	83.7	25	625
81	94.1	35	1225	9	85.2	41	1681
119	92.4	30	900	106	87.0	33	1089
49	98.9	25	625	113	89.4	28	784
115	96.6	49	2401	50	89.1	36	1296
69	96.0	50	2500	4	88.6	39	1521
100	95.9	42	1764	55	82.7	25	625
47	95.7	33	1089	99	85.7	43	1849
61	95.4	37	1369	86	86.1	51	2601
89	94.1	40	1600	101	88.1	37	1369
95	95.8	40	1600	1	86.8	31	961
104	92.1	47	2209	70	87.8	41	1681
58	91.8	35	1225	85	87.6	47	2209
111	90.6	43	1849	34	86.8	52	2704
116	90.5	33	1089	56	86.3	36	1296
97	92.0	46	2116	57	86.2	37	1369
23	92.3	39	1521	59	86.1	37	1369
94	95.2	34	1156	31	85.8	34	1156
29	91.2	33	1089	67	85.9	38	1444
27	96.7	42	1764	64	85.4	32	1024
52	93.2	49	2401	53	85.4	25	625
105	97.1	30	900	24	84.3	34	1156
92	97.9	35	1225	22	83.1	43	1849
90	94.7	40	1600	41	83.1	36	1296
74	90.2	30	900	72	82.4	45	2025
75	94.7	46	2116	102	82.1	32	1024
158	92.5	32	1024	98	84.5	46	2116
157	92.9	31	961	21	81.2	39	1521
152	96.7	27	729	117	78.6	38	1444
51	95.2	32	1024	37	74.5	32	1024
60	90.0	41	1681	44	78.6	26	676
118	99.2	38	1444	73	76.0	38	1444
7	90.7	41	1681	40	85.8	42	1764
		1485	58,081			1449	55,513

$\bar{X}_1$ 38.077 $\bar{X}_2$ 37.154

$\sum X_1$ 1485 $\sum X_2$ 1449

$\sum X_1^2$ 58,081 $\sum X_2^2$ 55,513

$\sum x_1^2$ 1536.769 $\sum x_2^2$ 1677.077

t value - 0.627

SOCIAL

"More Successful"				"Less Successful"			
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	39	1521	91	85.6	49	2401
156	93.7	39	1521	112	88.3	40	1600
11	93.2	34	1156	3	83.5	40	1600
8	92.9	44	1936	64	81.1	30	900
32	94.8	37	1369	35	89.6	40	1600
124	94.6	32	1024	84	78.9	43	1849
126	94.4	35	1225	10	83.7	39	1521
81	94.1	43	1849	9	85.2	42	1764
119	92.4	43	1849	106	87.0	41	1681
49	98.9	49	2401	113	89.4	42	1764
115	96.6	46	2116	50	89.1	46	2116
69	96.0	42	1764	4	88.6	57	3249
100	95.9	45	2025	55	82.7	47	2209
47	95.7	52	2704	99	85.7	39	1521
61	95.4	49	2401	86	86.1	50	500
89	94.1	40	1600	101	88.1	47	2209
95	95.8	36	1296	1	86.8	57	3249
104	92.1	40	1600	70	87.8	44	1936
58	91.8	40	1600	85	87.6	30	900
111	90.6	48	2304	34	86.8	32	1024
116	90.5	44	1936	56	86.3	41	1681
97	92.0	41	1681	57	86.2	25	625
23	92.3	34	1156	59	86.1	39	1521
94	95.2	57	3249	31	85.8	41	1681
29	91.2	47	2209	67	85.9	48	2304
27	96.7	$36\frac{1}{2}$	1332.25	64	85.4	35	1225
52	93.2	39	1521	53	85.4	50	2500
105	97.1	49	2401	24	84.3	37	1369
92	97.9	46	2116	22	83.1	38	1444
90	94.7	37	1369	41	83.1	33	1089
74	90.2	41	1681	72	82.4	38	1444
75	94.7	52	2704	102	82.1	37	1369
158	92.5	29	841	98	84.5	42	1764
157	92.9	39	1521	21	81.2	46	2116
152	96.7	39	1521	117	78.6	40	1600
51	95.2	45	2025	37	74.5	43	1849
60	90.0	37	1369	44	78.6	49	2401
118	99.2	40	1600	73	76.0	41	1681
7	90.7	30	900	40	85.8	37	1369
		1615.5	68,393.25			1615	66,625

$\bar{X}_1$ 41.423 $\bar{X}_2$ 41.410

$\sum X_1$ 1615.5 $\sum X_2$ 1615

$\sum X_1^2$ 68,393.25 $\sum X_2^2$ 66,625

$\sum x_1^2$ 1474.269 $\sum x_2^2$ -252.564

t value = 0.013

POLITICAL

	"More Successful"				"Less Successful"		
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	55	3025	91	85.6	45	2025
156	93.7	43	1849	112	88.3	44	1936
11	93.2	37	1369	3	83.5	34	1156
8	92.9	42	1764	64	81.1	37	1369
32	94.8	37	1369	35	89.6	34	1156
124	94.6	44	1936	84	78.9	37	1369
126	94.4	40	1600	10	83.7	43	1849
81	94.1	33	1089	9	85.2	38	1444
119	92.4	49	2401	106	87.0	37	1369
49	98.9	35	1225	113	89.4	43	1849
115	96.6	38	1444	50	89.1	43	1849
69	96.0	43	1849	4	88.6	31	961
100	95.9	34	1156	55	82.7	46	2116
47	95.7	41	1681	99	85.7	32	1024
61	95.4	30	900	86	86.1	35	1225
89	94.1	39	1521	101	88.1	38	1444
95	95.8	36	1296	51	86.8	20	400
104	92.1	35	1225	70	87.8	43	1849
58	91.8	43	1849	85	87.6	49	2401
111	90.6	40	1600	34	86.8	39	1521
116	90.5	40	1600	56	86.3	27	729
97	92.0	37	1369	57	86.2	34	1156
23	92.3	33	1089	59	86.1	34	1156
94	95.2	43	1849	31	85.8	37	1369
29	91.2	45	2025	67	85.9	29	841
27	96.7	$46\frac{1}{2}$	2162.25	64	85.4	28	784
52	93.2	41	1681	53	85.4	38	1444
105	97.1	39	1521	24	84.3	38	1444
92	97.9	49	2401	22	83.1	36	1296
90	94.7	43	1849	41	83.1	46	2116
74	90.2	46	2116	72	82.4	33	1089
75	94.7	26	676	102	82.1	53	2809
158	92.5	37	1369	98	84.5	38	1444
157	92.9	49	2401	21	81.2	37	1369
152	96.7	36	1296	117	78.6	36	1296
51	95.2	40	1600	37	74.5	48	2304
60	90.0	40	1600	44	78.6	38	1444
118	99.2	38	1444	73	76.0	30	900
7	90.7	43	1849	40	85.8	43	1849
		1565.5	64,045.25			1471	57,151

$\overline{X}_1$ 40.141 $\overline{X}_2$ 37.718

$\sum X_1$ 1565.5 $\sum X_2$ 1471

$\sum X_1^2$ 64,045.25 $\sum X_2^2$ 57,151

$\sum x_1^2$ 1204.475 $\sum x_2^2$ 1667.897

t value = 1.742

RELIGIOUS

	"More Successful"				"Less Successful"		
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	55	3025	91	85.6	51	2601
156	93.7	27	729	112	88.3	54	2916
11	93.2	54	2916	3	83.5	48	2304
8	92.9	49	2401	64	81.1	50	2500
32	94.8	55	3025	35	89.6	54	2916
124	94.6	51	2601	84	78.9	47	2209
126	94.4	55	3025	10	83.7	53	2809
81	94.1	60	3600	9	85.2	45	2025
119	92.4	57	3249	106	87.0	56	2136
49	98.9	58	3364	113	89.4	55	3025
115	96.6	54	2916	50	89.1	56	3136
69	96.0	41	1681	4	88.6	39	1521
100	95.9	52	2704	55	82.7	53	2809
47	95.7	54	2916	99	85.7	57	3249
61	95.4	59	3481	86	86.1	51	2601
89	94.1	57	3249	101	88.1	59	3481
95	95.8	52	2704	1	86.8	53	2809
104	92.1	47	2209	70	87.8	42	1764
58	91.8	22	484	85	87.6	36	1296
111	90.6	50	2500	34	86.8	56	3136
116	90.5	59	3481	56	86.3	49	2401
97	92.0	47	2209	57	86.2	47	2209
23	92.3	49	2401	59	86.1	54	2916
94	95.2	43	1849	67	85.9	56	3136
29	91.2	45	2025	31	85.8	55	3025
27	96.7	45½	2070.25	64	85.4	56	3136
52	93.2	36	1296	53	85.4	55	3025
105	97.1	52	2704	98	84.5	52	2704
92	97.9	53	2809	24	84.3	50	2500
90	94.7	42	1764	22	83.1	53	2809
74	90.2	46	2116	41	83.1	38	1444
75	94.7	40	1600	72	82.4	61	3721
158	92.5	51	2601	102	82.1	48	2304
157	92.9	53	2809	21	81.2	54	2916
152	96.7	62	3844	117	78.6	55	3025
51	95.2	60	3600	37	74.5	51	2601
60	90.0	47	2209	44	78.6	58	3364
118	99.2	52	2704	73	76.0	57	3249
7	90.7	24	576	40	85.8	55	3025
		1915.5	97,446.25			2019	105,753

$\bar{X}_1$ 49.115 $\bar{X}_2$ 51.769

$\sum X_1$ 1915.5 $\sum X_2$ 2019

$\sum X_1^2$ 97,446.25 $\sum X_2^2$ 105,753

$\sum x_1^2$ 3365.731 $\sum x_2^2$ 1230.924

t value = 1.507

AESTHETIC

"More Successful"					"Less Successful"			
Code	Rating	X	x^2		Code	Rating	X	x^2
71	90.0	22	484		91	85.6	30	900
156	93.7	43	1849		112	88.3	30	900
11	93.2	33	1089		3	83.5	43	1849
8	92.9	23	529		64	81.1	40	1600
32	94.8	25	625		35	89.6	38	1444
124	94.6	30	900		84	78.9	32	1024
126	94.4	34	1156		10	83.7	49	2401
81	94.1	33	1089		9	85.2	34	1156
119	92.4	36	1296		106	87.0	37	1369
49	98.9	22	484		113	89.4	35	1225
115	96.6	27	729		50	89.1	29	841
69	96.0	24	576		4	88.6	33	1089
100	95.9	25	625		55	82.7	34	1156
47	95.7	26	676		99	85.7	35	1225
61	95.4	32	1024		86	86.1	25	625
89	94.1	27	729		101	88.1	23	529
95	95.8	25	625		1	86.8	44	1936
104	92.1	36	1296		70	87.8	29	841
58	91.8	43	1849		85	87.6	31	961
111	90.6	32	1024		34	86.8	33	1089
116	90.5	30	900		56	86.3	44	1936
97	92.0	31	961		57	86.2	52	2704
23	92.3	41	1681		59	86.1	33	1089
94	95.2	34	1156		67	85.9	31	961
29	91.2	44	1936		31	85.8	39	1521
27	96.7	29.5	870.25		64	85.4	45	2025
52	93.2	30	900		53	85.4	34	1156
105	97.1	40	1600		98	84.5	25	625
92	97.9	25	625		24	84.3	39	1521
90	94.7	41	1681		22	83.1	33	1089
74	90.2	45	2025		41	83.1	44	1936
75	94.7	34	1156		72	82.4	25	625
158	92.5	52	2704		102	82.1	21	441
157	92.9	29	841		21	81.2	29	841
152	96.7	41	1681		117	78.6	36	1296
51	95.2	32	1024		37	74.5	27	729
60	90.0	43	1849		44	78.6	29	841
118	99.2	33	1089		73	76.0	28	784
7	90.7	54	2916		40	85.8	25	625
		1306.5	46,249.25				1323	46,905

$\bar{X}_1$ 33.500 $\bar{X}_2$ 33.923

$\sum X_1$ 1306.500 $\sum X_2$ 1323

$\sum X_1^2$ 46,249.250 $\sum X_2^2$ 46,905

$\sum x_1^2$ 2481.500 $\sum x_2^2$ 1024.769

t value = 0.275

OUTDOOR

"More Successful"					"Less Successful"			
Code	Rating	X	X^2		Code	Rating	X	X^2
71	90.0	19	361		91	85.6	22	484
156	93.7	27	729		112	88.3	19	361
11	93.2	49	2401		3	83.5	24	576
8	92.9	29	841		64	81.1	56	3136
32	94.8	54	2916		35	89.6	20	400
124	94.6	59	3481		84	78.9	13	169
126	94.4	37	1369		10	83.7	26	616
81	94.1	26	676		9	85.2	27	729
119	92.4	30	900		106	87.0	31	961
49	98.9	56	3136		113	89.4	50	2500
115	96.6	33	1089		50	89.1	30	900
69	96.0	33	1089		4	88.6	55	3025
100	95.9	56	3136		55	82.7	27	729
47	95.7	25	625		99	85.7	30	900
61	95.4	35	1225		86	86.1	39	1521
89	94.1	28	784		101	88.1	52	2704
95	95.8	69	4761		1	86.8	39	1521
104	92.1	45	2025		70	87.8	30	900
58	91.8	35	1225		85	87.6	47	2209
111	90.6	23	529		34	86.8	61	3721
116	90.5	31	961		56	86.3	58	3364
97	92.0	48	2304		57	86.2	54	2916
23	92.3	52	2704		59	86.1	35	1225
94	95.2	19	361		67	85.9	64	4096
29	91.2	45	2025		31	85.8	49	2401
27	96.7	29	841		64	85.4	44	1936
52	93.2	26	676		53	85.4	36	1296
105	97.1	18	324		98	84.5	41	1681
92	97.9	32	1024		24	84.3	61	3721
90	94.7	38	1444		22	83.1	54	2916
74	90.2	37	1369		41	83.1	35	1225
75	94.7	36	1296		72	82.4	42	1764
158	92.5	64	4096		102	82.1	27	729
157	92.9	27	729		21	81.2	25	625
152	96.7	25	625		117	78.6	57	3249
51	95.2	51	2601		37	74.5	55	3025
60	90.0	32	1024		44	78.6	48	2304
118	99.2	51	2601		73	76.0	39	1521
7	90.7	33	1089		40	85.8	40	1600
		1462	61,392				1562	69,716

$\bar{X}_1$ 37.487 $\bar{X}_2$ 40.051

$\sum X_1$ 1462 $\sum X_2$ 1562

$\sum X_1^2$ 61,392 $\sum X_2^2$ 59,716

$\sum x_1^2$ 6585.744 $\sum x_2^2$ 7155.898

t value = 0.842

COMPUTATIONAL

"More Successful"					"Less Successful"			
Code	Rating	X	x^2		Code	Rating	X	x^2
71	90.0	44	1936		81	85.6	35	1225
156	93.7	38	1444		112	88.3	10	100
11	93.2	31	961		3	83.5	6	36
8	92.9	25	625		64	81.1	41	1681
32	94.8	35	1225		35	89.6	17	289
124	94.6	17	289		84	78.9	43	1849
126	94.4	9	81		10	83.7	17	289
81	94.1	22	484		9	85.2	36	1296
119	92.4	20	400		106	87.0	29	841
49	98.9	9	81		113	89.4	14	196
115	96.6	11	121		50	89.1	21	441
69	96.0	23	529		4	88.6	18	324
100	95.9	28	784		55	82.7	12	144
47	95.7	17	289		99	85.7	21	441
61	95.4	19	361		86	86.1	15	225
89	94.1	17	289		101	88.1	27	729
95	95.8	18	324		51	86.8	16	256
104	92.1	28	784		70	87.8	37	1369
58	91.8	27	729		85	87.6	23	529
111	90.6	29	841		34	86.8	22	484
116	90.5	9	81		56	86.3	9	81
97	92.0	17	289		57	86.2	30	900
23	92.3	9	81		69	86.1	24	576
94	95.2	39	1521		67	85.9	17	289
29	91.2	9	81		31	85.8	20	400
27	96.7	29	841		64	85.4	9	81
52	93.2	39	1521		53	85.4	8	64
105	97.1	26	676		24	84.3	37	1369
92	97.9	19	361		22	83.1	14	196
90	94.7	12	144		41	83.1	24	576
74	90.2	27	729		72	82.4	22	484
75	94.7	32	1024		102	82.1	18	324
158	92.5	19	361		98	84.5	24	570
157	92.9	22	484		21	81.2	32	1024
152	96.7	15	225		117	78.6	18	324
51	95.2	18	324		37	74.5	15	225
60	90.0	13	169		44	78.6	13	169
117	99.2	60	3600		73	76.0	31	961
7	90.7	51	2601		40	85.8	44	1936
		932	27,690				860	23,299

$\bar{X}_1$ 23.897 $\bar{X}_2$ 22.051

ΣX_1 932 ΣX_2 860

ΣX_1^2 27,690 ΣX_2^2 23,299

Σx_1^2 5417.590 Σx_2^2 4334.898

t value = 0.719

MECHANICAL

"More Successful"					"Less Successful"			
Code	Rating	X	X^2		Code	Rating	X	X^2
71	90.0	24	576		91	85.6	11	121
156	93.7	10	100		112	88.3	37	1369
11	93.2	38	1444		3	83.5	45	2025
8	92.9	34	1156		64	81.1	31	961
32	94.8	45	2025		35	89.6	24	576
124	94.6	40	1600		84	78.9	21	441
126	94.4	29	841		10	83.7	49	2401
81	94.1	26	676		9	85.2	42	1764
119	92.4	15	225		106	87.0	15	225
49	98.9	25	625		113	89.4	50	2500
115	96.6	42	1764		50	89.1	15	225
69	96.0	38	1444		4	88.6	38	1444
100	95.9	44	1936		55	82.7	19	361
47	95.7	46	2116		99	85.7	19	361
61	95.4	25	625		86	86.1	55	3025
89	94.1	23	529		101	88.1	33	1089
95	95.8	58	3364		1	86.8	29	841
104	92.1	42	1764		70	87.8	33	1089
58	91.8	37	1369		85	87.6	53	2809
111	90.6	22	484		34	86.8	45	2025
116	90.5	33	1089		56	86.3	22	484
97	92.0	56	3136		57	86.2	34	1156
23	92.3	22	484		69	86.1	46	2116
94	95.2	22	484		67	85.9	32	1024
29	91.2	37	1369		31	85.8	17	289
27	96.7	20	400		64	85.4	41	1681
52	93.2	50	2500		53	85.4	37	1369
105	97.1	10	100		98	84.5	55	3025
92	97.9	31	961		24	84.3	32	1024
90	94.7	41	1681		22	83.1	43	1849
74	90.2	28	784		41	83.1	25	625
75	94.7	31	961		72	82.4	35	1225
158	92.5	40	1600		102	82.1	17	289
157	92.9	29	841		21	81.2	49	2401
152	96.7	35	1225		117	78.6	34	1156
51	95.2	28	784		37	74.5	49	2401
60	90.0	18	324		44	78.6	28	784
118	99.2	11	121		73	76.0	30	900
7	90.7	9	81		40	85.8	43	1849
		1214	43,588				1333	51,299

$\bar{X}_1$ 31.128 $\bar{X}_2$ 34.179

$\sum X_1$ 1214 $\sum X_2$ 1333

$\sum X_1^2$ 43,588 $\sum X_2^2$ 51,299

$\sum x_1^2$ 5798.359 $\sum x_2^2$ 5737.744

t value = 1.093

SCIENTIFIC

	"More Successful"				"Less Successful"		
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	24	576	91	85.6	23	529
156	93.7	28	784	112	88.3	23	529
11	93.2	36	1296	3	83.5	21	441
8	92.9	41	1681	64	81.1	41	1681
32	94.8	31	961	35	89.6	33	1089
124	94.6	39	1521	84	78.9	21	441
126	94.4	30	900	10	83.7	22	484
81	94.1	28	784	9	85.2	35	1225
119	92.4	16	256	106	87.0	22	484
49	98.9	55	3025	113	89.4	27	729
117	96.6	28	784	50	89.1	33	1089
69	96.0	36	1296	4	88.6	41	1681
100	95.9	38	1444	55	82.7	28	784
47	95.7	41	1681	99	85.7	25	625
61	95.4	25	625	86	86.1	15	225
89	94.1	23	529	101	88.1	44	1936
95	93.8	49	2401	51	86.8	24	576
104	92.1	42	1764	70	87.8	33	1089
58	91.8	39	1521	85	87.6	53	2809
111	90.6	11	121	34	86.8	25	625
116	90.5	14	196	56	86.3	20	400
97	92.0	28	784	57	86.2	39	1521
23	92.3	35	1225	59	86.1	39	1521
94	95.2	22	484	67	85.9	38	1444
29	91.2	30	900	31	85.8	34	1156
27	96.7	27	729	64	85.4	30	900
52	93.2	31	961	53	85.4	28	784
105	97.1	14	196	98	84.5	41	1681
92	97.9	60	3600	24	84.3	43	1849
90	94.7	33	1089	22	83.1	34	1156
74	90.2	33	1089	41	83.1	47	2209
75	94.7	33	1089	72	82.4	24	576
158	92.5	37	1369	102	82.1	23	529
157	92.9	26	676	21	81.2	23	529
152	96.7	27	729	117	78.6	39	1521
51	95.2	27	729	37	74.5	47	2209
60	90.0	18	324	44	78.6	34	1156
118	99.2	41	1681	73	76.0	35	1225
7	90.7	25	625	50	85.8	21	441
		1221	42,425			1228	41,878

$\bar{X}_1$ 31.308 $\bar{X}_2$ 31.487

$\sum X_1$ 1221 $\sum X_2$ 1228

$\sum X_1^2$ 42,425 $\sum X_2^2$ 41,878

$\sum x_1^2$ 4198.308 $\sum x_2^2$ 3211.744

t value = 0.080

PERSUASIVE

"More Successful"					"Less Successful"			
Code	Rating	X	X^2		Code	Rating	X	X^2
71	90.0	49	2401		91	85.6	70	4900
156	93.7	46	2116		112	88.3	56	3136
11	93.2	35	1225		3	83.5	79	6241
8	92.9	37	1369		64	81.1	17	289
32	94.8	21	441		35	89.6	46	2116
124	94.6	55	3025		84	78.9	56	3136
126	94.4	61	3721		10	83.7	43	1849
81	94.1	51	2601		9	85.2	30	900
119	92.4	55	3025		106	87.0	46	2116
49	98.9	42	1764		113	89.4	41	1681
115	96.6	73	5329		50	89.1	62	3844
69	96.0	71	5041		4	88.6	53	2809
100	95.9	39	1521		55	82.7	62	3844
47	95.7	57	3249		39	85.7	38	1444
61	95.4	72	5184		86	86.1	56	3136
89	94.1	57	3249		101	88.1	30	900
95	95.8	73	5329		1	86.8	38	1444
104	92.1	54	2916		70	87.8	37	1369
58	91.8	46	2116		85	87.6	41	1681
111	90.6	50	2500		34	86.8	45	2025
116	90.5	70	4900		56	86.3	41	1681
97	92.0	42	1764		57	86.2	19	361
23	92.3	58	3364		59	86.1	37	1369
94	95.2	52	2704		67	85.9	35	1225
29	91.2	44	1936		31	85.8	50	2500
27	96.7	55	3025		64	85.4	35	1225
52	93.2	43	1849		53	85.4	68	4624
105	97.1	68	4624		98	84.5	32	1024
92	97.9	43	1849		24	84.3	15	225
90	94.7	67	4489		22	83.1	36	1296
74	90.2	38	1444		41	83.1	49	2401
75	94.7	59	3481		72	82.4	61	3721
158	92.5	37	1369		102	82.1	65	4225
157	92.9	69	4761		21	81.2	30	900
152	96.7	30	900		117	78.6	46	2116
51	95.2	48	2304		37	74.5	34	1156
60	90.0	63	3969		44	78.6	40	1600
118	99.2	30	900		73	76.0	41	1681
7	90.7	42	1764		40	85.8	47	2209
		2002	109,488				1727	84,199

$\bar{X}_1$ 51.333 $\bar{X}_2$ 44.282

$\sum X_1$ 2002 $\sum X_2$ 1727

$\sum X_1^2$ 109,488 $\sum X_2^2$ 84,199

$\sum x_1^2$ 6718.667 $\sum x_2^2$ 7723.898

t value = 2.259

ARTISTIC

	"More Successful"				"Less Successful"		
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	14	196	91	85.6	40	1600
156	93.7	19	361	112	88.3	22	484
11	93.2	16	256	3	83.5	27	729
8	92.9	11	121	64	81.1	37	1369
32	94.8	24	576	35	89.6	24	576
124	94.6	35	1225	84	78.9	8	64
126	94.4	25	625	10	83.7	43	1849
81	94.1	20	400	9	85.2	22	484
119	92.4	22	484	106	87.0	24	576
99	98.9	16	256	113	89.4	41	1681
116	96.6	18	324	50	89.1	11	121
69	96.0	8	64	4	88.6	7	49
100	95.9	28	784	55	82.7	13	169
47	95.7	15	225	99	85.7	30	900
61	95.4	17	289	86	86.1	21	441
89	94.1	12	144	101	88.1	12	144
95	95.8	18	324	1	86.8	26	676
104	92.1	12	144	70	87.8	18	324
58	91.8	13	169	85	87.6	16	256
111	90.6	11	121	34	86.8	28	784
116	90.5	27	729	56	86.3	37	1369
97	92.0	20	400	57	86.2	37	1369
23	92.3	23	529	59	86.1	15	225
94	95.2	26	676	67	85.9	10	100
29	91.2	14	196	31	85.8	7	49
27	96.7	11	121	64	85.4	34	1156
52	93.2	20	400	53	85.4	29	841
105	97.1	17	289	98	84.5	21	441
92	97.9	12	144	24	84.3	25	625
90	94.7	3	9	22	83.1	26	676
74	90.2	27	729	41	83.1	21	441
75	94.7	4	16	72	82.4	16	256
158	92.5	29	841	102	82.1	26	676
157	92.9	14	196	21	81.2	22	484
152	96.7	33	1089	117	78.6	26	676
51	95.2	14	196	37	74.5	12	144
60	90.0	25	625	44	78.6	28	784
118	99.2	16	256	73	76.0	8	64
7	90.7	22	484	40	85.8	24	576
		711	15,013			894	24,228

$\bar{X}_1$ 18.231 $\bar{X}_2$ 22.923

$\sum X_1$ 711 $\sum X_2$ 894

$\sum X_1^2$ 15,013 $\sum X_2^2$ 24,228

$\sum x_1^2$ 2050.923 $\sum x_2^2$ 3734.769

t value = 2.374

LITERARY

"More Successful"				"Less Successful"			
Code	Rating	X	x^2	Code	Rating	X	x^2
71	90.0	25	625	91	85.6	14	196
156	93.7	10	100	112	88.3	17	289
11	93.2	15	225	3	83.5	7	49
8	92.9	24	576	64	81.1	8	64
32	94.8	29	841	35	89.6	20	400
124	94.6	8	64	84	78.9	27	729
126	94.4	17	289	10	83.7	15	225
81	94.1	21	441	9	85.2	13	169
119	92.4	35	1225	106	87.0	36	1296
49	98.9	20	400	113	89.4	16	256
115	96.6	23	529	50	89.1	25	125
69	96.0	14	196	4	88.6	17	289
100	95.9	8	64	55	82.7	26	676
47	95.7	19	361	99	85.7	15	225
61	95.4	20	400	86	86.1	8	64
89	94.1	18	324	1	86.8	38	1444
95	95.8	19	361	101	88.1	26	676
104	92.1	14	196	70	87.8	26	676
58	91.8	12	144	85	87.6	30	900
111	90.6	18	324	34	86.8	13	169
116	90.5	20	400	56	86.3	10	100
97	92.0	15	225	57	86.2	36	1296
23	92.3	9	81	59	86.1	26	676
94	95.2	26	676	67	85.9	15	225
29	91.2	34	1156	31	85.8	17	289
27	96.7	27	729	64	85.4	10	100
52	93.2	20	400	53	85.4	24	576
105	97.1	32	1024	98	84.5	9	81
92	97.9	24	576	24	84.3	17	289
90	94.7	17	289	22	83.1	23	529
74	90.2	27	729	41	83.1	20	400
25	94.7	19	361	72	82.4	25	625
158	92.5	38	1444	102	82.1	10	100
157	92.9	20	400	21	81.2	24	576
152	96.7	18	324	117	78.6	5	25
51	95.2	18	324	37	74.5	12	144
60	90.0	36	1296	44	78.6	81	64
118	99.2	19	361	73	76.0	16	256
7	90.7	14	196	40	85.8	20	400
		802	18,676			724	15,668

$\bar{X}_1$ 23.128 $\bar{X}_2$ 18.564

$\sum X_1$ 802 $\sum X_2$ 724

$\sum X_1^2$ 18,676 $\sum X_2^2$ 15,668

$\sum x_1^2$ 2183.590 $\sum x_2^2$ 2227.590

t value = 2.645

MUSICAL

"More Successful"					"Less Successful"			
Code	Rating	X	X^2		Code	Rating	X	X^2
71	90.0	9	81		91	85.6	10	100
156	93.7	26	676		112	88.3	17	289
11	93.2	12	144		3	83.5	18	324
8	92.9	4	16		64	81.1	19	361
32	94.8	9	81		35	89.6	9	81
124	94.6	9	81		84	78.9	19	361
126	94.4	14	196		10	83.7	10	100
81	94.1	7	49		9	85.2	5	25
119	92.4	9	81		106	87.0	18	324
49	98.9	13	169		113	89.4	10	100
115	96.6	14	196		50	89.1	12	144
69	96.0	6	36		4	88.6	8	64
100	95.9	6	36		55	82.7	17	289
47	95.7	11	121		99	85.7	28	441
61	95.4	17	289		86	86.1	21	441
89	94.1	22	484		101	88.1	12	144
95	95.8	5	25		1	86.8	16	256
104	92.1	6	36		70	87.8	5	25
58	91.8	8	64		85	87.6	7	49
111	90.6	9	81		34	86.8	11	121
116	90.5	10	100		56	86.3	17	289
97	92.0	4	16		57	86.2	19	361
23	92.3	19	361		59	86.1	18	324
94	95.2	16	256		67	85.9	25	625
29	91.2	21	441		31	85.8	26	676
27	96.7	14	196		64	85.4	19	361
52	93.2	13	169		53	85.4	7	49
105	97.1	9	81		98	84.5	11	121
92	97.9	9	81		54	84.3	12	144
90	94.7	11	121		22	83.1	10	100
74	90.2	15	225		41	83.1	19	361
75	94.7	9	81		72	82.4	10	100
158	92.5	8	64		102	82.1	20	400
157	92.9	7	49		21	81.2	3	9
152	96.7	19	361		117	78.6	22	484
51	95.2	10	100		37	74.5	7	49
60	90.0	17	289		44	78.6	18	334
118	99.2	5	25		73	76.0	12	144
7	90.7	9	81		40	85.8	8	64
		441	6,039				548	9,034

$\bar{X}_1$ 11.308 $\bar{X}_2$ 14.051

$\sum X_1$ 441 $\sum X_2$ 548

$\sum X_1^2$ 5039 $\sum X_2^2$ 9034

$\sum x_1^2$ 1052.308 $\sum x_2^2$ 1333.898

t value = 2.170

SOCIAL SERVICE

	"More Successful"				"Less Successful"		
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	61	3721	91	85.6	63	3969
156	93.7	65	4225	112	88.3	66	4356
11	93.2	47	2209	3	83.5	59	3481
8	92.9	76	5776	64	81.1	28	784
32	94.8	57	3249	35	89.6	64	4096
124	94.6	49	2401	84	78.9	64	4096
126	94.4	63	3969	10	83.7	54	2916
81	94.1	74	5476	9	85.2	59	3481
119	92.4	63	3969	106	87.0	46	2116
49	98.9	75	5625	113	89.4	42	1764
115	96.6	70	4900	50	89.1	71	5041
69	96.0	53	2809	4	88.6	74	5476
100	95.9	69	4761	55	82.7	67	4489
47	95.7	63	3969	99	85.7	61	3721
61	95.4	71	5041	86	86.1	57	3249
89	94.1	65	4225	101	88.1	64	4096
95	95.8	46	2116	1	86.8	54	2916
104	92.1	58	3364	70	87.8	55	3025
58	91.8	72	5184	85	87.6	43	1849
111	90.6	49	2401	34	86.8	41	1681
116	90.5	70	4900	56	86.3	59	3481
97	92.0	69	4761	57	86.2	31	961
23	92.3	63	3969	59	86.1	55	3025
94	95.2	62	3844	67	85.9	68	4624
49	91.2	65	4225	31	85.8	71	5041
27	96.7	62	3844	64	85.4	70	4900
52	93.2	46	2116	53	85.4	69	4761
105	97.1	60	3600	98	84.5	58	3364
92	97.9	66	4356	24	84.3	50	2500
90	94.7	59	3481	22	83.1	53	2809
74	90.2	56	3136	41	83.1	72	5184
75	94.7	57	3249	72	82.4	52	2704
158	92.5	44	1936	102	82.1	73	5329
157	92.9	64	4096	21	81.2	60	3600
152	96.7	54	2916	117	78.6	54	2916
51	95.2	60	3600	37	74.5	63	3969
60	90.0	48	2304	44	78.6	76	5776
118	99.2	68	4624	73	76.0	62	3844
7	90.7	67	4489	50	85.8	51	2601
		2386	148,836			2279	137,991

$\overline{X}_1$	61.179	$\overline{X}_2$	58.436	
$\sum X_1$	2386	$\sum X_2$	2279	
$\sum X_1^2$	148,836	$\sum X_2^2$	137,991	
$\sum x_1^2$	2861.743	$\sum x_2^2$	4815.590	

t value = 1.205

CLERICAL

	"More Successful"				"Less Successful"		
Code	Rating	X	X^2	Code	Rating	X	X^2
71	90.0	55	3025	91	85.6	34	1156
156	93.7	39	1521	112	88.3	41	1681
11	93.2	55	3025	3	83.5	24	576
8	92.9	51	2601	64	81.1	50	2500
32	94.8	35	1225	35	89.6	46	2116
124	94.6	30	900	84	78.9	45	2025
126	94.4	28	784	10	83.2	46	2116
81	94.1	52	2704	9	85.2	63	3969
119	92.4	52	2704	106	87.0	57	3249
49	98.9	19	361	113	89.4	35	1225
115	96.6	15	225	50	89.1	43	1849
69	96.0	60	3600	4	88.6	24	576
100	95.9	36	1296	55	82.7	36	1296
47	95.7	32	1024	99	85.7	57	3249
61	95.4	26	676	86	86.1	42	1764
89	94.1	39	1521	101	88.1	47	2209
95	95.8	29	841	1	86.8	49	2401
104	92.1	36	1296	70	87.8	62	3844
58	91.8	32	1024	85	87.6	35	1225
111	90.6	76	5776	34	86.8	47	2209
116	90.5	32	1024	56	86.3	42	1764
97	92.0	38	1444	57	86.2	37	1369
23	92.3	35	1225	59	86.1	42	1764
94	95.2	49	2401	31	85.8	33	1089
29	91.2	18	324	67	85.9	35	1225
27	96.7	55	3025	63	85.4	16	256
52	93.2	54	2916	53	85.4	26	676
105	97.1	54	2916	98	84.5	38	1444
92	97.9	34	1156	24	84.3	51	2601
90	94.7	51	2601	22	83.1	34	1156
74	90.2	37	1369	41	83.1	25	625
75	94.7	52	2704	72	82.4	37	1369
158	92.5	23	529	102	82.1	32	1024
157	92.9	49	2401	21	81.2	62	3844
152	96.7	38	1444	117	78.6	42	1764
51	95.2	43	1849	37	74.5	41	1681
60	90.0	31	961	44	78.6	27	729
118	99.2	27	729	73	76.0	61	3721
7	90.7	36	1296	40	85.8	48	2304
		1553	68,443			1612	71,640

$\bar{X}_1$	39.821		$\bar{X}_2$	41.333	
$\sum X_1$	1553		$\sum X_2$	1612	
$\sum X_1^2$	68,443		$\sum X_2^2$	71,640	
$\sum x_1^2$	6601.744		$\sum x_2^2$	5010.667	

t value = 0.541