ACT

RESEARCH REPORTS

October, 1965 No. 8

A FACTOR ANALYSIS OF STUDENT "EXPLANATIONS" OF THEIR CHOICE OF A COLLEGE

James M. Richards, Jr.
John L. Holland

Published by Research and Development Division · American College Testing Program · P. O. Box 168, Iowa City, Iowa 52240

Summary

This study examined the explanations students give of their choice of college. Using data obtained from a sample of 8292 high school students drawn from the November, 1964, nationwide ACT testing of college applicants, 27 items pertaining to influences on a student's choice of college were studied. Factor analysis was used to reduce the complex interrelations among these items to a small number of categories, or factors, that can be interpreted in terms of their underlying nature. Four major areas of influence were found--intellectual emphasis, practicality, advice of others, and social emphasis. These four areas of influence are highly similar for men and women. Possible applications of the results in counseling and in research are discussed.

A Factor Analysis of Student "Explanations" of Their Choice of a College

James M. Richards, Jr. and John L. Holland

The process of choosing a college has received little scientific or educational study. Only a few formal studies have been published (Holland, 1958, 1959; Douvan & Kaye, 1962), although there are a number of speculative papers in the educational literature. Students, parents, and educators need a more complete knowledge of the process that students use to select a college, and of the possible outcomes of different choices, for an appropriate choice may be critical for a student's personal development and eventual achievement. Such knowledge will help make the choice of a student's college less hazardous and more satisfying.

The present report deals with a limited aspect of college choice, but one that we must solve as a step in solving the larger problem. Specifically, we wanted to know if many typical explanations of, or influences on, the choice of a college could be organized into a few categories that could be easily interpreted. These categories could be used then as a brief profile of influences on college choice. Such a profile will facilitate the study of the process of college choice and the student outcomes associated with different choices. Eventually, it will provide admissions officers and college counselors with more information for helping students and parents select more appropriate colleges.

Method

The following sections summarize the way we obtained the information about a student's explanation of his choice of college, the sample of students, and the statistical analysis which was used to organize and interpret the data. The source of data was the Student Profile Section, a short background questionnaire which is a regular part of the ACT test battery. ACT tests are administered nationwide to high school students who are applying to colleges that require the ACT tests (ACT Technical Report, 1965). The information that students provide in response to questions in the Student Profile Section is the kind of information typically requested in college application blanks. The Student Profile Section differs mainly from similar institutional forms because the ACT information is collected and reported in more systematic fashion. Specifically, the Student Profile Section provides coded information about a student's aspirations, attitudes, achievements, and personnel needs (housing, financial aid, and the like).

For the present study, 27 items pertaining to influence on a student's choice of college were used. These specific influences fall into the following areas:

Atmosphere and reputation--such influences as desirable intellectual atmosphere, good faculty, national reputation of college, etc.

Facilities--such influences as a special curriculum, comprehensive physical and educational facilities, etc.

Personal influences--advice of parents, advice of high school

teacher, etc.

Other considerations--low-cost college, desirable location, etc.

Each student rated 27 kinds of influence according to how much each consideration had affected his choice of a college. (Since he indicated which colleges were to receive his ACT scores, he had made a meaningful choice of a college.) Each item was rated on a three-point scale ("of no importance," "a minor consideration," "a major consideration"). Scores from 1 to 3 were assigned to his response so that a high score indicated a high degree of influence.

The students were a three-percent representative sample of the November, 1964 ACT national sample, drawn by taking every 33rd, 67th, and 100th student on the master tape for the November, 1964 testing.[1] By this procedure, a sample of 8292 students was obtained--4303 men and 3989 women.

Product-moment correlations among the 27 items were computed for each sex. The 27 x 27 correlation matrices for men and women were factor analyzed using the principal components method with unity in the diagonal. This procedure, including the use of unity in the diagonal, was employed to obtain a solution that would permit the calculation of factor scores (Kaiser, 1965). The first four principal components for each sex were rotated to a final solution by the Varimax procedure (Kaiser, 1958).

---

[1]Calculations for this study were carried out by the Measurement Research Center, University of Iowa, and by the University of Utah Computer Center.

Results

A complete list of the 27 items pertaining to influence on choice of college, together with the item means and standard deviations, is shown in Table 1.

Table 1

Means and Standard Deviations for Student Ratings of Influences that Affected Their Choice of College

Influences	Males (N=4303)		Females (N=3989	
	Mean	S.D.	Mean	S.D.
1. Good faculty	2.58	.64	2.63	.59
2. High scholastic standards	2.57	.61	2.67	.55
3. Desirable social climate and activities program	2.21	.67	2.30	.67
4. Size	1.92	.73	2.08	.73
5. Research reputation	2.00	.74	1.93	.75
6. Desirable location	2.38	.69	2.49	.64
7. Special curriculum I wanted	2.42	.73	2.56	.66
8. Comprehensive physical and educational facilities	2.25	.72	2.31	.73
9. Emphasis on religious and ethical values	1.82	.72	2.07	.75
10. Progressive, liberal outlook	2.01	.70	2.19	.69
11. Low-cost college	2.21	.70	2.21	.70
12. Good athletic program	1.85	.75	1.46	.64
13. Close to home	2.11	.77	2.13	.75
14. Advice of parents	2.12	.76	2.27	.73
15. Advice of brother or sister	1.47	.67	1.52	.70
16. Advice of alumni contacts	1.78	.76	1.83	.77
17. My friends are going (will go) there	1.53	.65	1.48	.63
18. Advice of high school teacher(s)	1.95	.77	1.91	.76
19. Advice of high school counselor or college counselor	2.14	.79	2.10	.79
20. Talk with admissions counselor from college	1.91	.84	1.97	.84
21. Campus visit or tour	2.02	.78	2.21	.78
22. Has fraternities and sororities	1.49	.62	1.50	.63
23. College offered me a scholarship or other financial aid	1.70	.85	1.66	.84

Table 1 (cont.)

Influences	Males		Females	
	Mean	S.D.	Mean	S.D.
24. Desirable intellectual atmosphere	2.32	.67	2.43	.64
25. National reputation of the college	2.28	.70	2.38	.68
26. Coeducational	2.02	.69	2.19	.72
27. I can meet the academic competition without strain	2.02	.71	2.15	.72

The correlations among the 27 items for each sex are shown in Table 2, with correlations for males appearing above the diagonal and correlations for females below the diagonal. Seven factors for males and six factors for females had an eigenvalue greater than 1.00. Inspection of the plot of eigenvalues for each sex suggested, however, that only the first four factors for each sex should be rotated. Accordingly, rotated solutions were computed by the Varimax procedure with the results shown in Table 3. An oblique rotated solution was also computed by the Promax procedure (Hendrickson & White, 1964) with k = 4. Since the .10 hyperplane count for the Promax solution was only slightly higher than for the Varimax solution, the orthogonal Varimax solution was retained.[2]

[2]Tables showing the unrotated factor matrices, the Promax rotated solutions, the correlations among Promax factors, and the transformation matrices for computing the Promax solutions from the Varimax solutions are shown in the Appendix of this report.

Table 2

Correlations Among Student Ratings of Influences on Their Choice of College

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1.	--	43	20	03	22	00	23	25	19	21	00	06	-08	11	-01	12	-06	17	21	25	19	05	16	34	25	11	11
2.	41	--	20	04	20	-03	23	20	19	17	03	05	-07	12	00	08	-07	15	20	20	15	03	15	34	30	07	08
3.	19	20	--	21	09	09	14	23	17	18	01	24	-03	09	06	13	11	10	12	15	21	20	10	23	16	27	12
4.	05	05	23	--	07	17	09	10	07	08	06	10	03	04	05	07	07	03	04	05	18	13	01	08	11	15	09
5.	16	18	09	04	--	06	23	19	16	23	04	07	00	11	04	16	02	20	19	18	15	06	12	25	28	08	10
6.	-02	01	13	15	04	--	06	04	-02	04	18	02	46	08	-01	00	10	02	02	-02	03	02	-07	05	05	11	07
7.	22	21	12	05	16	06	--	27	13	16	04	09	-08	07	-01	12	-05	16	20	21	17	05	15	27	21	08	11
8.	23	20	15	07	18	07	24	--	26	25	07	35	-05	14	06	18	04	20	21	23	21	14	22	26	21	16	14
9.	21	18	15	06	20	-01	16	25	--	32	05	15	-03	22	14	19	06	20	19	25	20	10	20	26	17	04	12
10.	23	17	17	07	23	02	15	23	29	--	11	13	00	14	10	17	04	19	22	25	18	14	15	32	18	14	14
11.	02	03	00	04	00	15	06	10	06	10	--	08	28	10	03	05	10	11	11	06	03	01	16	05	01	10	16
12.	04	01	17	06	16	05	01	21	16	14	05	--	00	12	14	16	14	16	16	18	20	28	22	08	12	22	16
13.	-07	-05	-08	-03	-03	37	-06	-03	-04	-03	26	04	--	13	00	-02	19	01	-03	-07	-07	-01	-04	-03	-01	03	08
14.	10	08	08	02	07	12	09	11	19	11	15	09	18	--	28	30	13	33	31	30	18	11	22	16	15	10	18
15.	-01	-02	06	04	07	00	-03	09	13	08	02	17	02	26	--	29	19	20	16	19	15	23	17	04	08	11	11
16.	15	09	15	08	14	02	09	14	16	15	03	16	-01	26	23	--	19	43	36	34	26	24	26	18	16	11	16
17.	-08	-06	11	06	02	09	-09	-01	04	03	08	15	16	09	12	17	--	20	09	07	10	27	07	01	07	20	17
18.	21	14	07	00	18	01	17	18	18	17	10	15	02	28	19	39	16	--	65	44	24	19	32	21	17	08	19
19.	22	18	10	03	21	00	19	19	18	20	11	14	01	31	17	34	10	67	--	49	26	17	32	22	18	09	19
20.	24	18	14	08	21	-02	19	19	23	22	03	19	-09	26	17	31	02	41	47	--	46	27	43	28	17	13	23
21.	18	14	21	19	15	06	15	17	18	18	00	16	-06	15	10	23	09	22	24	42	--	32	27	25	20	19	17
22.	02	03	24	14	12	04	03	09	06	12	-02	26	00	08	12	14	23	14	17	19	25	--	20	13	16	30	19
23.	14	13	04	-03	16	-02	11	13	19	13	18	17	00	18	16	17	06	32	33	38	18	15	--	23	12	11	17
24.	29	31	18	05	22	02	21	28	27	33	06	07	-07	13	06	16	-05	22	24	26	24	08	26	--	37	15	12
25.	22	31	18	06	25	04	20	19	18	21	03	11	-04	11	04	17	02	18	19	20	19	16	17	40	--	21	13
26.	07	09	25	19	04	11	06	09	03	10	06	14	01	06	05	08	16	04	08	10	16	28	05	08	18	--	23
27.	11	05	15	09	13	07	12	14	13	18	13	14	04	19	09	17	13	20	24	23	19	17	15	15	17	20	--

Note. --Correlations for males (N = 4303) are shown above the diagonal and for females (N = 3989) below the diagonal.

Table 3

Varimax Rotations of the First Four Influences Factors

for Men and Women

Influences	Male Factors				Female Factors			
	A	B	C*	D	A	B	C*	D*
1. Good faculty	66	-07	08	00	63	07	-02	-06
2. High scholastic standards	66	-05	05	-04	65	-03	01	00
3. Desirable social climate	33	-01	-03	53	30	-04	58	-02
4. Size	13	15	-10	42	11	-10	50	05
5. Research reputation	49	10	14	01	39	19	10	-03
6. Desirable location	08	73	-10	12	06	-11	24	66
7. Special curriculum	53	00	07	04	52	04	-02	05
8. Comprehensive facilities	45	-04	15	30	49	12	13	10
9. Emphasis on religious and ethical values	37	-02	28	12	43	23	07	02
10. Progressive, liberal outlook	44	08	20	15	48	15	15	04
11. Low-cost college	05	55	15	01	10	12	06	61
12. Good athletic program	07	-05	19	55	03	29	41	01
13. Close to home	-10	81	-01	00	-13	03	-02	78
14. Advice of parents	11	22	55	03	10	50	01	34
15. Advice of brother or sister	-15	-02	47	25	-11	47	15	01
16. Advice of alumni contacts	09	-01	63	16	11	57	17	-02
17. Friends going there	-22	27	26	42	-26	27	41	20
18. Advice of h.s. teachers	19	09	75	-02	21	24	-03	04
19. Advice of h.s. or college counselor	27	05	71	-05	27	72	-01	03
20. Talk with admissions counselor	31	-09	65	12	33	60	13	-15
21. Campus visit	26	-11	36	39	28	31	39	-12
22. Has fraternities and sororities	-04	-09	29	63	-02	23	63	-09
23. College offered aid	20	-07	54	12	23	52	-03	04
24. Intellectual atmosphere	65	03	14	12	65	16	05	-01
25. National reputation	51	05	07	22	53	10	21	-01
26. Coeducational	12	10	02	63	10	02	62	08
27. Can meet academic competition	11	21	27	30	17	29	30	16

*Reflected factor

Finally, the Coefficient of Congruence (Tucker, 1951) was computed between each Varimax factor for males and each Varimax factor for females. The results are shown in Table 4, with female factors rearranged to place highest coefficients in the diagonal.

Table 4

Similarity Between Influences Factors for Men and Women

Female Factors	Male Factors			
	A	B	C*	D
A	99	-01	43	31
D*	00	97	09	11
B	38	08	99	38
C*	28	17	31	97

*Reflected factor

Discussion

The results in Table 4 indicate a high degree of similarity between the structure of influences for men and women, since a good match between the sexes is obtained for all factors. The matching also has both convergent and discriminant validity (Campbell & Fiske, 1959). The Coefficients of Congruence between matching factors ranged from .97 to .99 with a median of .98, while the coefficients for unmatched factors ranged from -.01 to .43 with a median of approximately .22. It should be emphasized that the factor analyses and rotations were

completely independent, and that the samples were large and diverse. The results, therefore, are impressive evidence for a consistent organization of considerations influencing college choice for both sexes. Such consistency from sample to sample is important in evaluating the adequacy of representation of the domain by the rotated factor solution (Harman, 1960).

The Varimax factors are briefly described and interpreted below:

Intellectual Emphasis (Male A-Female A) has high loadings on the influences "good faculty," "high scholastic standards," "special curriculum," "desirable intellectual atmosphere," and "national reputation." In simpler terms, students who say they were affected by these influences are characterized by their academic interests and values. This factor resembles the "Affluence" factor obtained by Astin (1962) in his study of college characteristics.

Practicality (Male B-Female D) has high loadings on "desirable location," "close to home," and "low-cost college." One would expect students attending junior colleges, especially community colleges, to score high on this factor because large proportions of these students cannot afford to attend distant colleges (or lack the ability to gain entrance to selective institutions).

Advice of Others (Male C-Female B) has high loadings on "advice of parents," "advice of alumni contact," "advice of high school teachers," and "advice of high school or college counselor." This factor may

represent a dependent but good student who is offered financial aid. In Table 2, "offer of financial aid" has its highest loadings on this factor, and similarly, "advice of high school teacher" has higher loadings than any other kind of advice.

Social Emphasis (Male D-Female C) has high loadings on "desirable social climate," "good athletic program," "has fraternities and sororities," and "coeducational." The high scoring student is epitomized by an emphasis on social and extra-curricular life so that the factor corresponds closely to the Collegiate Orientation hypothesized by Trow (1960) in his student typology.

Some factor theorists (Kaiser, 1960) would probably recommend rotating all factors with an eigenvalue greater than 1.00 rather than deciding how many factors to rotate on the basis of an inspection of a plot of eigenvalues. To check the effect of rotating more factors, the complete unrotated factor matrices were rotated to a Varimax solution.[3] For each sex, the first four rotated factors corresponded closely to the factors obtained when only four factors are rotated. The three additional factors for males were primarily characterized by high loadings on "advice of brother or sister," "emphasis on religious and ethical values," and "size" respectively, and the two additional factors for females by high loadings on "emphasis on religious and ethical values" and "size" respectively. While the additional factors appear interpretable, the

---

[3]A table showing the rotated factor matrix for each sex is presented in the Appendix of this report.

solutions obtained by rotating four factors only seem preferable because of their simplicity and clarity.

Implications

Because the original 27 student influences can be represented now by four factors or major kinds of influence, we have a useful intellectual tool for several practical and research purposes.

The explanations that students give for their choice of college are consistent with the current manner in which high school counselors and college admissions officers assist students choose a college. The four major areas of influence reported by students are also four areas emphasized in informational publications and proffered services; i.e., intellectual aspects of the institution, factual data about cost and location, social activities available, and availability of pre-college counseling. High school counselors, therefore, may use these four groupings as a framework for planning and evaluating their pre-college services for students. Interviews or questionnaires could be used to determine the relative importance of the four areas of influence for individual students. On the basis of this information, the counselor can make more appropriate suggestions of possible colleges for each student to consider. Such an approach to counseling for college choice may be more effective than grouping students on less relevant bases such as male and female.

The four major areas of influence can also be used to design admissions blanks so that they can be interpreted more readily. For example, the 27 items can be organized in such blanks factor by factor

and a small set of influences can be used in place of the 27. Inter-college comparisons within a university, or between different institutions can also be made with little effort by examining the relative influence of the four groupings rather than each separate influence. In short, college officials have a way to organize and interpret student explanations with greater facility. The brief profile obtained can also be used for such purposes as evaluating the college's pre-admission information program.

The congruence between three of Trow's (1960) four student types and the factors in the present study is striking. Trow's "Academic" type corresponds closely to the "Intellectual Emphasis" factor; his "Collegiate" type corresponds to the "Social Emphasis" factor; and his "Vocational" type has some similarity to the "Practicality" factor. Trow's "Nonconformist" type does not correspond directly to the "Advice of Others" factor although they conceivably are simply the opposite poles of the same dimension.

The possible use of the factors in research appears especially promising. The student explanations can be related to a variety of relevant student characteristics and outcomes: goals in college, achievements in college, effects of a college. The student explanation factors may also provide important statistical controls in studying the effect of a college, and the factors may be helpful in understanding the character of a college's climate. For instance, a college with a high proportion of students with "practical" explanations of choice would be expected to have a different climate than a college with a high proportion of "intellectual" explanations.

A careful study of the profile of explanations should also contribute to faculty understanding of its students and facilitate the articulation of student orientations with institutional programs.

References

American College Testing Program. ACT Technical Report. Iowa City: Author, 1965.

Astin, A. W. An empirical characterization of higher educational institutions. Journal of Educational Psychology, 1962, 53, 224-235.

Campbell, D. T., & Fiske, D. W. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin, 1959, 56, 81-105.

Douvan, Elizabeth, & Kaye, Carol. Motivational factors in college entrance. In N. Sanford (Ed.), The American college. New York: Wiley, 1962. Pp. 193-224.

Harman, H. H. Modern factor analysis. Chicago: Univer. of Chicago Press, 1960.

Hendrickson, A. E., & White, P. O. Promax: a quick method for rotation to oblique simple structure. British Journal of Statistical Psychology, 1964, 17, 65-70.

Holland, J. L. Student explanations of college choice and their relation to college popularity, college productivity, and sex differences. College and University, 1958, 33, 313-320.

Holland, J. L. Determinants of college choice. College and University, 1959, 35, 11-28.

Kaiser, H. F. The Varimax criterion for analytic rotation in factor analysis. Psychometrika, 1958, 23, 187-200.

Kaiser, H. F. The application of electronic computers to factor analysis.

Educational and Psychological Measurement, 1960, 20, 141-151.

Kaiser, H. F. Psychometric approaches to factor analysis. In Proceedings of the 1964 invitational conference on testing problems. Princeton, New Jersey: Educational Testing Service, 1965.

Trow, M. The campus viewed as a culture. In H. T. Sprague (Ed.), Research on college students. Boulder, Colorado: Western Inter-State Commission for Higher Education, 1960.

Tucker, L. R. A method for synthesis of factor analysis studies. Personnel Research Section Report, No. 984. Washington, D. C.: Department of the Army, 1951.

APPENDIX

Table A

Unrotated Factors for Student Ratings of Influences

that Affected Their Choice of College

	Males							Females					
	I	II	III	IV	V	VI	VII	I	II	III	IV	V	VI
1.	45	-46	13	-09	-05	06	18	45	-42	-03	-13	16	08
2.	41	-48	14	-13	-10	04	22	41	-44	-13	-20	18	-05
3.	40	-05	34	33	01	-02	-15	38	00	-52	12	10	18
4.	21	11	37	20	-12	18	-58	19	11	-47	07	27	37
5.	40	-24	14	-18	-22	-03	00	42	-15	-02	-02	-29	-17
6.	08	33	57	-37	-07	11	-26	10	33	-33	-53	14	13
7.	39	-33	14	-08	09	24	-13	37	-31	-04	-20	16	00
8.	51	-17	16	12	38	-17	-09	46	-17	-11	-16	-28	15
9.	46	-13	-01	-03	12	-57	-16	46	-15	02	-07	-39	29
10.	47	-14	13	-07	10	-40	-07	47	-18	-11	-10	-33	06
11.	17	30	25	-38	43	03	18	17	25	04	-56	-07	-15
12.	40	20	10	37	42	-10	01	35	27	-15	18	-47	-04
13.	-02	47	44	-49	00	-06	03	-02	47	-02	-63	-01	-06
14.	46	24	-16	-26	-16	-21	-04	42	30	25	-21	08	30
15.	32	35	-25	12	-26	-35	-02	29	33	19	17	-26	40
16.	54	21	-30	-04	-20	-05	-11	50	21	20	16	12	21
17.	23	54	09	11	-22	-09	23	16	54	-14	10	-07	-17
18.	61	17	-36	-27	-05	17	-05	61	17	43	05	22	-08
19.	62	06	-34	-27	02	25	-08	64	13	40	04	26	-10
20.	66	01	-30	-05	09	21	-09	64	01	23	20	17	02
21.	55	03	-04	22	-03	23	-23	52	04	-15	21	20	12
22.	43	32	01	45	-10	09	11	36	31	-34	35	-05	-27
23.	52	06	-26	-03	34	09	12	48	07	30	00	-08	-30
24.	54	-34	19	-08	-13	-08	08	55	-35	-05	-14	-10	-08
25.	46	-22	24	02	-38	-01	22	49	-24	-18	-07	-02	-29
26.	36	22	34	36	-07	13	32	28	21	-51	11	15	-23
27.	39	24	12	00	11	15	32	42	20	-10	-03	03	-18
Eigen-value	5.18	2.07	1.78	1.54	1.12	1.07	1.01	4.84	2.00	1.75	1.54	1.15	1.06

Table B

Promax Oblique Rotated Factors for Student Ratings

of Influences that Affected Their Choice of College

Influences	Males				Females			
	A	B	C*	D	A	B	C*	D*
1. Good faculty	67	-05	00	-05	64	00	-07	-04
2. High scholastic standards	68	-03	-02	-10	69	-12	-03	02
3. Desirable social climate	30	-03	-19	55	27	-17	59	-03
4. Size	12	14	-21	45	09	-20	53	04
5. Research reputation	49	11	09	-05	36	14	06	-03
6. Desirable location	12	74	-13	10	11	-18	22	66
7. Special curriculum	54	01	01	-01	54	-02	-07	07
8. Comprehensive facilities	41	-04	05	27	48	05	09	10
9. Emphasis on religious and ethical values	32	-02	23	06	39	18	01	02
10. Progressive, liberal outlook	41	08	13	09	46	08	11	04
11. Low-cost college	04	55	16	-04	13	11	-11	62
12. Good athletic program	-02	-08	08	56	-07	25	39	-01
13. Close to home	-07	81	02	-04	-09	04	-06	78
14. Advice of parents	02	21	58	-07	02	52	-07	32
15. Advice of brother or sister	-28	-05	47	21	-23	50	10	-02
16. Advice of alumni contacts	-04	-04	64	07	-03	57	10	-05
17. Friends going there	-31	24	23	41	-36	26	41	17
18. Advice of high school teacher	06	07	80	-15	06	77	-13	02
19. Advice of high school or college counselor	16	04	75	-18	13	74	-11	01
20. Talk with admissions counselor	18	-11	64	02	19	59	05	-17
21. Campus visit	16	-14	27	35	18	24	36	-14
22. Has fraternities and sororities	-16	-13	18	64	-13	16	64	-12
23. College offered aid	09	-09	53	03	13	54	-11	02
24. Intellectual atmosphere	64	03	05	06	64	08	-01	00
25. National reputation	50	05	-03	19	52	00	17	00
26. Coeducational	06	07	-13	67	05	-12	64	06
27. Can meet academic competition	04	19	22	26	10	24	26	14

*Reflected factor

Table C

Correlations Among Promax Factors

	A	B	C	D
A	--	-05	32	23
B	34	--	02	09
C	21	29	--	-37
D	-07	06	08	--

Note. --Correlations for males are shown above the diagonal and correlations for females below. Factors are reflected as appropriate.

Table D

Transformation Matrices for Converting

Varimax Solutions to Promax Solutions

	Males			
	A	B	C	D
A	.98	.03	.11	-.07
B	.04	1.00	-.02	-.05
C	.18	.03	.98	.14
D	-.09	-.05	.19	.99

	Females			
	A	B	C	D
A	.97	-.12	.06	-.03
B	-.20	.98	.11	.04
C	.09	.13	.99	-.03
D	-.06	.02	-.05	1.00

Note. --These matrices pertain to unreflected factors

Table E

Varimax Rotation of All Factors with an Eigenvalue

Greater Than Unity

	Males							Females					
	A	B	C*	D	E*	F*	G*	A	B	C*	D*	E*	F
1.	64	-06	16	05	-13	14	-04	59	18	-10	-06	12	14
2.	68	-06	11	02	-10	09	-08	66	07	-02	00	06	10
3.	23	-04	-02	31	00	31	41	23	02	31	-04	17	53
4.	01	11	02	07	00	06	77	06	03	13	03	01	68
5.	51	07	13	-04	12	05	10	30	09	21	-03	37	-18
6.	06	71	-05	00	02	-07	38	05	-05	07	65	-02	33
7.	40	01	27	-03	-27	14	22	52	14	-06	06	05	08
8.	22	00	18	13	-10	62	12	32	07	03	08	51	08
9.	23	-02	09	-13	35	62	02	20	16	-08	00	63	08
10.	33	09	08	-03	22	51	04	32	07	11	03	52	01
11.	-05	60	18	14	-16	23	-21	10	07	06	62	08	-16
12.	-12	-02	15	44	-05	54	10	-14	09	43	00	51	-02
13.	-05	80	-08	04	13	-06	00	-12	00	03	78	-03	-06
14.	14	19	37	00	48	11	-03	-03	53	-11	33	20	14
15.	-07	-08	17	17	65	11	01	-33	39	-02	-01	44	14
16.	10	-05	50	10	44	06	10	00	60	08	-03	16	17
17.	-07	21	04	50	42	-07	-02	-28	16	49	20	04	03
18.	15	09	74	04	24	00	-01	17	76	11	05	02	-13
19.	20	06	77	00	11	02	02	24	76	13	05	00	-11
20.	18	-08	71	11	06	16	09	25	64	15	-14	13	04
21.	15	-14	44	25	04	13	39	22	38	25	-12	10	34
22.	-01	-14	20	62	21	07	20	-03	13	70	-09	09	12
23.	05	-03	57	19	-05	31	-16	20	43	23	05	15	-35
24.	64	01	14	06	06	22	07	57	15	08	-01	32	-04
25.	64	-01	02	27	17	-04	08	54	08	32	00	15	-06
26.	19	06	-03	70	02	04	11	15	-02	60	07	-07	28
27.	12	22	25	46	-02	07	-12	15	25	37	16	09	02

*Reflected factor

This report is the eighth in a series published by the Research and Development Division of American College Testing Program. Reports are published monthly and mailed free of charge to educators and other interested persons who have asked to be on the special research report mailing list.

The research reports have been deposited with the American Documentation Institute, ADI Auxiliary Publications Project, Photoduplication Service, Library of Congress, Washington 25, D.C. (ADI Document numbers and prices are given below). Printed copies may be obtained free from the Research and Development Division, American College Testing Program. Photocopies and microfilms may be obtained at cost from ADI by citing ADI document number. Advance payment is required. Make checks or money orders payable to: Chief, Photoduplication Service, Library of Congress.

Reports in the series are:

*No. 1 A Description of American College Freshmen, by C. Abe, J. L. Holland, Sandra W. Lutz, & J. M. Richards, Jr. (ADI Doc. 8554; photo, $8.75; microfilm, $3.00)

No. 2 Academic and Non-Academic Accomplishment: Correlated or Uncorrelated? by J. L. Holland, & J. M. Richards, Jr. (ADI Doc. 8555; photo, $3.75; microfilm, $2.00)

No. 3 A Description of College Freshmen: I. Students with Different Choices of Major Field, by C. Abe, & J. L. Holland (ADI Doc. 8556; photo, $7.50; microfilm, $2.75)

No. 4 A Description of College Freshmen: II. Students with Different Vocational Choices, by C. Abe, & J. L. Holland (ADI Doc. 8557; photo, $7.50; microfilm, $2.75)

No. 5 A Description of Junior Colleges, by J. M. Richards, Jr., Lorraine M. Rand, & L. P. Rand (ADI Doc. 8558; photo, $3.75; microfilm, $2.00)

No. 6 Comparative Predictive Validities of the American College Tests and Two Other Scholastic Aptitude Tests, by L. Munday (ADI Doc. 8559; photo, $2.50; microfilm, $1.75)

No. 7 The Relationship Between College Grades and Adult Achievement. A Review of the Literature, by D. P. Hoyt. (ADI Doc. number not yet available)

*This report now available only from ADI.