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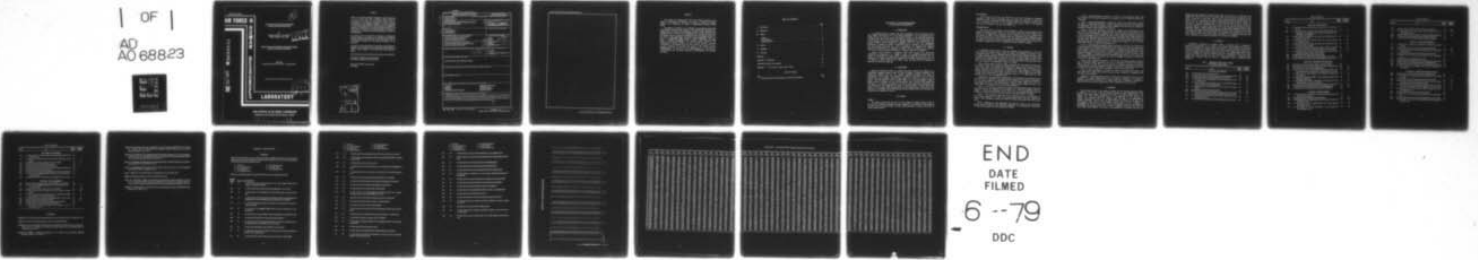
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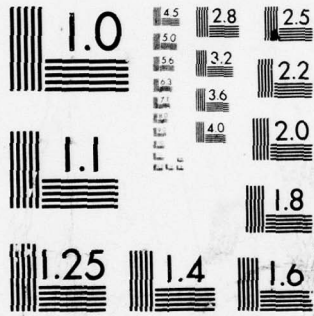
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**SITUATIONAL FACTOR IDENTIFICATION
IN AIR FORCE ORGANIZATIONS**

By

William H. Hendrix, Lt Col, USAF
Vicki B. Halverson, A1C, USAF

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**OCCUPATION AND MANPOWER RESEARCH DIVISION
Brooks Air Force Base, Texas 78235**

May 1979

Interim Report for Period 14 June 1976 - 31 December 1978

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This interim report was submitted by Occupation and Manpower Research Division, under project 2313, with HQ Air Force Human Resources Laboratory (AFSC), Brooks Air Force Base, Texas 78235. Lt Col William H. Hendrix was the Principal Investigator for the Laboratory.

This report has been reviewed by the Information Office (OI) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

RAYMOND E. CHRISTAL, Technical Director
Occupation and Manpower Research Division

RONALD W. TERRY, Colonel, USAF
Commander

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Research discussed in this report focused on factor analyzing the Job Inventory of the Organizational Assessment Package (OAP) to isolate the factors associated with a manager's situational environment. Nine factors were extracted and orthogonally rotated to simple structure. Each factor's internal consistency index was computed. The utility of the Job Inventory as an organizational diagnostic instrument is discussed.		

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PREFACE

This research was completed under Work Unit 2313T103, Supervisory Style Effects on Productivity and Retention, in response to Request for Personnel Research 77-10, Development and Analysis of Organizational Assessment Package (OAP).

The authors are indebted to the Leadership and Management Development Center (LMDC) personnel whose assistance in data gathering was invaluable to this research effort. In particular, the constructive comments of Major David Wilkerson (LMDC/EDC) and Lt Col Fred Petty (LMDC/EDC) were especially beneficial. Also, this program could not have been accomplished without the assistance provided by Col Peter A. Land (LMDC/DMC), Col Henry M. Kelly (LMDC/EDC), Major L. B. Henry, Jr. (LMDC/DMC), CMSgt Richard G. Buxton (LMDC/EDC), and SMSgt Judith A. Vermilya (LMDC/DMC). The computer support provided by the Computational Sciences Division, Air Force Human Resources Laboratory (AFHRL/SM), was outstanding; these personnel worked long, hard hours to meet stringent deadlines. In particular, the efforts of Mr. Charles Greenway (AFHRL/SMAW), A1C Michael D. Cowan (AFHRL/SMAW), A1C B. David Brewer (AFHRL/SMAW), and SrA Debbie McQuiston (AFHRL/SMOQ) were especially noteworthy.

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SITUATIONAL FACTOR IDENTIFICATION IN AIR FORCE ORGANIZATIONS

I. INTRODUCTION

It is generally agreed (e.g., Fiedler, 1967; Hersey & Blanchard, 1972a, 1972b; Katz & Kahn, 1966; Reddin, 1970; Wofford, 1971) that effective management is not only dependent on the manager and his style but also on how well matched his style is to the situational requirements. A manager with a given style might be quite effective in situation A, but if he employs the same style in situation B, he may be destined for decreased effectiveness, if not outright failure. For example, Wofford (1971) identified five managerial styles and found that organizational effectiveness, as measured by morale or productivity, varied as a function of the style employed and the situational environment (i.e., type of organization). The realization that managerial effectiveness is dependent on the situational environment and that a manager needs to modify his style in line with the situational requirements is a contingency approach to management.

Hendrix (1976) presented a contingency model which proposed that organizational effectiveness was dependent on the manager or leader, the situational environment, and the criterion of effectiveness. This report focuses on defining the situational factors that need to be considered by a manager in performing his managerial role. Additional research related to this area was reported by Gould (1978) and by Tuttle, Gould, and Hazel (1975) in developing an instrument to measure job satisfaction.

II. BACKGROUND

Hendrix and Halverson (1978) in a previous study factor analyzed data collected on an Organizational Assessment Package (OAP). The OAP was designed to measure contingency model components identified above (i.e., the manager, situational environment, and criteria of effectiveness). A factor analysis was performed on all items in the OAP to see if the factors associated with the contingency model had been tapped by the OAP and if items in any one section of the OAP loaded on factors in another section. If so, those items loading in different sections could be combined; once the OAP was rewritten. Next, a series of factor analyses was performed on the inventories or sections of the OAP to extract those factors orthogonal within each inventory but not orthogonal with factors in other inventories or sections. This report presents the factor analysis results associated with the Job Inventory Section of the OAP. The Job Inventory is an attitudinal survey which addresses job-related variables, such as job enrichment and advancement and recognition on the job.

III. METHOD

Subjects

The subjects of this study were 4,786 Air Force military and civilian employees located at five Air Force installations representing six major commands. The composition of the sample was 86 percent male, 14 percent female; 65 percent enlisted personnel, 17 percent officers, and 18 percent civilian personnel.

Data Collection

The data used in this study were collected by the Air Force Leadership and Management Development Center using an attitudinal survey, the OAP. The construction of the OAP is reported in Hendrix and Halverson (1978). The OAP contained 149 seven-point attitudinal items and 16 background items; 48 of the attitudinal items directly related to the situational environment are examined in this report (see Appendix A).

Situational Factors

Items were written for inclusion in the Job Inventory to measure the job enrichment factors proposed by Hackman, Oldham, Janson, and Purdy (1975). Those were (a) skill variety, (b) task identity, (c) task significance, (d) autonomy, and (e) feedback from the job. In addition, items were written to measure a Work Interference factor and a Planning and Time Management factor. The Work Interference factor dealt with the extent and adequacy of additional duties, equipment and supplies, and provided workspace. The Planning and Time Management factor focused on the time spent in planning and the use of management information systems in planning.

IV. RESULTS

In identifying situational factors which were applicable across organizations, the data were factor analyzed and varimax rotated to yield nine factors. The reliability of each factor in terms of internal consistency was then established using the coefficient alpha technique (Cronbach, 1951). To establish internal consistency, the items for each factor were rank ordered by factor loading magnitude. The coefficient alpha was computed for the top two highest loadings, and then for the top three items; iteratively, each additional item was added until either all items associated with a factor were included or a predetermined number were included.

Each of the nine factors is listed in Table 1, along with the items included with that factor, their variable number, factor loading, and coefficient alpha index. As can be noted in the table, not all factor items were included when computing the coefficient alphas. The decision as to whether to include an item was based on a requirement for a factor loading of .30 or higher; therefore, those items with loadings below .30 will not have a coefficient alpha entry listed. Table 1 reveals that all factors had an internal consistency index of .75 or higher except for Work Repetition (.62) and Task Accomplishment (.68).

Appendix B is the rotated factor analysis output. The Job Inventory item numbers are listed on the far left of Appendix B. The associated item descriptions can be found in Appendix A. The next column contains the communality value. The third column, labeled ID, is the list of item numbers for Factor 1. The fourth column is a listing of factor loadings for Factor 1. In a similar fashion, the remaining factors are listed across Appendix B.

Factor 1, Job Enrichment, accounted for 21.98% of the common-factor variance. This factor deals with some of the components of the Hackman et al. (1975) job enrichment model. For example, it contains items associated with the extent that a job requires skill variety and task identity (i.e., does whole job) and with how well the job provides performance feedback.

Factor 2, Task Autonomy, which deals with the autonomy factor in the Hackman et al. (1975) model, accounted for 11.38% of the common-factor variance. This factor indicates the degree to which individuals or groups have freedom to schedule and perform their work as they see fit.

Factor 3, Planning and Time Management, accounted for 12.24% of the common-factor variance. This factor focuses on how well people manage their time in planning and on the extent to which various planning and control measures are utilized.

Factor 4, *Supervisor Influence*, accounted for 13.14% of the common-factor variance. This factor focuses on the worker's perception of the supervisor's role as it affects the worker's job environment.

Factor 5, *Advancement/Recognition*, accounted for 8.89% of the common-factor variance. This factor is concerned with the extent to which workers perceive that they have an opportunity for advancement, that their performance receives recognition, and that they are permitted to participate in decision making associated with their jobs.

Factor 6, *Work Group Performance*, accounted for 10.60% of the common-factor variance. This factor is not listed in Table 1 since this factor was deleted from the Job Inventory. As a part of a larger study (Hendrix & Halverson, 1978), a factor analysis was performed on all items in the OAP, including the Job Inventory. The data from the overall factor analysis revealed that the Work Group Performance factor in the Job Inventory loaded with items in another section of the OAP which dealt with Perceived Productivity. Once the OAP is rewritten, the Work Group Performance items will be deleted from the Job Inventory and included as a part of the OAP section which addresses the Perceived Productivity factor.

Factor 7, *Equipment/Work Space/Goal Clarity*, accounted for 7.09% of the common-factor variance. This factor is conceptually heterogeneous in that it deals with a variety of concepts, such as the adequacy of work space and tools, the extent to which job goals and objectives are clear, and the extent to which the job permits an individual to complete an entire task and to obtain performance feedback. If this factor is to be used, it appears that it should be limited to items related to equipment and working space. Since the coefficient alpha for the top two items is only .53, additional items need to be written and tested to strengthen this factor, or it should be deleted from an operational survey.

Factor 8, *Work Repetition*, accounted for 7.38% of the common-factor variance. This factor also is conceptually complex unless only the top two or three items are included. The coefficient alpha for the top two items was .71, and the top was .62. Therefore, the top two items provide a reasonable level of internal consistency to reliably tap this factor. Consequently, it appears that the other items should be deleted from consideration and only the top two be used.

Factor 9, *Task Accomplishment*, accounted for 7.29% of the common-factor variance. This factor deals with the extent that a job and its tasks are easy or difficult to accomplish and with the extent of job complexity.

Appendix C is the intercorrelation matrix of all items in the Job Inventory. An item can be identified by its variable number listed in the Job Inventory, Appendix A. For example, in Appendix A, the first item (number 17) is variable number 201. In Appendix C, variable 201 is listed as F0201 and is the first variable listed at the top right-hand corner of the table.

V. DISCUSSION

The Job Inventory was in part designed to measure the job enrichment dimensions defined by Hackman et al. (1975). It was not surprising, therefore, that job enrichment factors were isolated during factor analysis. Specifically, two factors were isolated which related to the Hackman et al. (1975) job enrichment model: i.e., Job Enrichment and Task Autonomy. In addition, three additional factors were identified which fall along a job simplification-job enrichment continuum. The first factor was Work Repetition and focused on the type of job which requires various levels of task repetition and the degree of ease or difficulty in accomplishing the job. The second factor, Task Accomplishment, focused on the difficulty in accomplishing job performance goals, due to barriers or difficulty of the job itself. The third factor isolated which appeared to fall along a job simplification-job enrichment continuum was

Planning and Time Management. Employees having control over their job (i.e., enriched jobs) could possibly score high on this factor in that they would be able to plan and manage their own efforts. A high score on this factor, however, could possibly indicate an unenriched job if the planning and use of management information systems were institutionalized routine functions. In such a case, the tasks performed could be time-consuming events serving as irritants and roadblocks to efficiently accomplishing the job. This is the case where the system is driving the work effort instead of serving it. The other factors in the work environment isolated were the Supervisor's Influence, Advancement/Recognition, and Equipment/Work Space/Goal Clarity. These factors deal with workers having adequate equipment and work space to perform their job, having work-efficient interactions with their supervisor, and recognition and advancement for work well done. Combined, these factors provide major components of the situational environment which deserve consideration when analyzing organizations for strengths and weaknesses.

VI. SUMMARY

Organizational effectiveness was presented within a contingency model of management. Effectiveness was proposed to be a function of the manager, the situational environment, and criteria of effectiveness. The research reported was limited to a single component of the model: the situational environment component. Nine factors were extracted during factor analysis, one of which was redundant with a factor in another OAP section. The remaining eight factors provided a basis for assessing the situational environment status of an organization. These factors, when combined with factors extracted from other OAP sections, should result in a survey instrument package which adequately taps the dynamics of organizations within a contingency model framework.

Table 1. Situational Factors, Factor Loadings, and Coefficient Alpha Indices

Variable	Item	Factor Loading	Coefficient Alpha
Factor One: Job Enrichment			
215	To what extent are you proud of your job?	.73	
244	To what extent does your work give you pride and feeling of self-worth?	.70	.86
210	To what extent does doing your job well affect a lot of people?	.63	.79
203	To what extent is your job significant, in that it affects others in some important way?	.61	.81
201	To what extent does your job require you to do many different things, using a variety of your talents and skills?	.58	.82
212	To what extent does your job require you to use a number of complex skills?	.54	.84
230	To what extent does your job keep you busy?	.52	.85
209	To what extent does your job provide the chance to know for yourself when you do a good job; and to be responsible for your own work?	.51	.86
217	To what extent do you know exactly what is expected of you in performing your job?	.49	.87
202	To what extent does your job involve doing a whole task or unit of work?	.49	.87

Table 1 (Continued)

Variable	Item	Factor Loading	Coefficient Alpha
Factor Two: Task Autonomy			
213	To what extent does your job give you freedom to do your work as you see fit?	.79	
204	To what extent does your job provide a great deal of freedom and independence in scheduling your work and selecting your own procedures to accomplish it?	.78	.81
214	To what extent are you allowed to make the major decisions required to perform your job well?	.67	.83
248	To what extent does your supervisor allow you to make decisions concerning your job?	.49	.84
205	To what extent does just doing your job provide you with chances to find out how well you are doing?	.41	.84
209	To what extent does your job provide the chance to know for yourself when you do a good job; and be responsible for your own work?	.36	.86
211	To what extent does your job provide you with the chance to finish completely the piece of work you have begun?	.35	.86
246	My supervisor asks for ideas before making decisions.	.28	
231	To what extent are people affected by decisions asked for their ideas?	.28	
202	To what extent does your job involve doing a whole task or unit of work?	.25	
Factor Three: Planning and Time Management			
224	How much of your time is used for weekly or monthly planning?	.80	
223	How much of your time is used for planning more than 6 months ahead?	.68	.71
225	How much of your time is used for daily planning?	.61	.71
222	To what extent do you use Management Information Systems (e.g., Computer Printouts, reports, etc.) to make decisions in your job?	.59	.70
219	To what extent are staff assistance visits helpful in achieving job performance?	.45	.70
229	To what extent is planning modified to meet changing job related needs? Changing environment?	.39	.71
232	To what extent is the amount of information you get from other work groups adequate to meet your job needs?	.36	.73
231	To what extent are the people affected by decisions asked for their ideas?	.35	.76
235	To what extent is your work group involved in establishing goals?	.35	.78
241	To what extent do people who perform well receive recognition?	.25	
Factor Four: Supervisor Influence			
247	To what extent does your supervisor encourage the people in your work group to work as a team?	.77	
246	My supervisor asks for ideas before making decisions.	.74	.79
245	To what extent does your supervisor provide the assistance you need to manage your work?	.74	.84
248	To what extent does your supervisor allow you to make decisions concerning your job?	.60	.86
216	To what extent do you feel accountable to your supervisor in accomplishing your job?	.44	.84

Table 1 (Continued)

Variable	Item	Factor Loading	Coefficient Alpha
241	To what extent do people who perform well receive recognition?	.38	.85
217	To what extent do you know exactly what is expected of you in performing your job?	.31	.85
244	To what extent does your work give you pride and feeling of self-worth?	.31	.86
220	To what extent are your job performance goals clear and specific?	.27	
236	To what extent does your work group solve problems effectively?	.26	
Factor Five: Advancement/Recognition			
239	To what extent do you have the opportunity to progress up your career ladder?	.74	
236	To what extent does your work group solve problems effectively?	.71	.69
234	To what extent are you aware of promotion/advancement opportunities that affect you?	.61	.69
241	To what extent do people who perform well receive recognition?	.48	.75
233	To what extent do you know what the objectives of your organization are?	.27	
243	To what extent are you satisfied with your job?	.24	
231	To what extent are the people affected by decisions asked for their ideas?	.21	
235	To what extent is your work group involved in establishing goals?	.21	
244	To what extent does your work give you pride and feeling of self-worth?	.20	
219	To what extent are staff assistance visits helpful in achieving job performance?	.19	
Factor Seven: Equipment/Work Space/Goal Clarity			
208	To what extent is the amount of work space provided adequate?	.74	
207	To what extent do you have adequate tools and equipment to accomplish your job?	.65	.53
220	To what extent are your job performance goals clear and specific?	.34	.56
211	To what extent does your job provide you with the chance to finish completely the piece of work you have begun?	.33	.62
209	To what extent does your job provide the chance to know for yourself when you do a good job; and to be responsible for your own work?	.30	.70
217	To what extent do you know exactly what is expected of you in performing your job?	.30	.75
221	To what extent are your job performance goals realistic?	.28	
233	To what extent do you know what the objectives of your organization are?	.26	
202	To what extent does your job involve doing a whole task or unit of work?	.22	
234	To what extent are you aware of promotion/advancement opportunities that affect you?	.21	

Table 1 (Continued)

Variable	Item	Factor Loading	Coefficient Alpha
Factor Eight: Work Repetition			
226	To what extent do you perform the same tasks repeatedly within a short period of time?	.81	
227	To what extent are you faced with the same type of problem on a weekly basis?	.80	.71
228	To what extent are tasks you perform easy to accomplish?	.47	.62
243	To what extent are you satisfied with your job?	.24	
225	How much of your time is used for daily planning?	.23	
244	To what extent does your work give you pride and feeling of self-worth?	.22	
215	To what extent are you proud of your job?	.17	
223	How much of your time is used for planning more than 6 months ahead?	.17	
206	To what extent do additional duties interfere with the performance of your primary job?	.17	
202	To what extent does your job involve doing a whole task or unit of work?	.16	
Factor Nine: Task Accomplishment			
218	To what extent are your job performance goals difficult to accomplish?	.64	
206	To what extent do additional duties interfere with the performance of your primary job?	.52	.32
228	To what extent are tasks you perform easy to accomplish?	.51	.40
212	To what extent does your job require you to use a number of complex skills?	.42	.46
201	To what extent does your job require you to do many different things, using a variety of your talents and skills?	.41	.58
202	To what extent does your job involve doing a whole task or unit of work?	.32	.62
230	To what extent does your job keep you busy?	.31	.68
220	To what extent are your job performance goals clear and specific?	.27	
221	To what extent are your job performance goals realistic?	.27	
217	To what extent do you know exactly what is expected of you in performing your job?	.22	

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APPENDIX A: JOB INVENTORY

Instructions

Below are items which relate to your job. Read each statement carefully and then decide to what extent the statement is true of your job. Indicate the extent that the statement is true for your job by choosing the statement below which best represents your job.

- | | |
|-----------------------------|------------------------------|
| 1 = Not at all | 5 = To a fairly large extent |
| 2 = To a very little extent | 6 = To a great extent |
| 3 = To a little extent | 7 = To a very great extent |
| 4 = To a moderate extent | |

Select the corresponding number for each question and enter it on the separate answer sheet.

**Variable
Number**

PART I: THE JOB ITSELF

- | | | |
|-----|-----|---|
| 201 | 17. | To what extent does your job require you to do many different things, using a variety of your talents and skills? |
| 202 | 18. | To what extent does your job involve doing a whole task or unit of work? |
| 203 | 19. | To what extent is your job significant, in that it affects others in some important way? |
| 204 | 20. | To what extent does your job provide a great deal of freedom and independence in scheduling your work and selecting your own procedures to accomplish it? |
| 205 | 21. | To what extent does just doing your job provide you with chances to find out how well you are doing? |
| 206 | 22. | To what extent do additional duties interfere with the performance of your primary job? |
| 207 | 23. | To what extent do you have adequate tools and equipment to accomplish your job? |
| 208 | 24. | To what extent is the amount of work space provided adequate? |
| 209 | 25. | To what extent does your job provide the chance to know for yourself when you do a good job; and to be responsible for your own work? |
| 210 | 26. | To what extent does doing your job well affect a lot of people? |
| 211 | 27. | To what extent does your job provide you with the chance to finish completely the piece of work you have begun? |
| 212 | 28. | To what extent does your job require you to use a number of complex skills? |

1 = Not at all
2 = To a very little extent
3 = To a little extent
4 = To a moderate extent

5 = To a fairly large extent
6 = To a great extent
7 = To a very great extent

- 213 29. To what extent does your job give you freedom to do your work as you see fit?
- 214 30. To what extent are you allowed to make the major decisions required to perform your job well?
- 215 31. To what extent are you proud of your job?
- 216 32. To what extent do you feel accountable to your supervisor in accomplishing your job?
- 217 33. To what extent do you know exactly what is expected of you in performing your job?
- 218 34. To what extent are your job performance goals difficult to accomplish?
- 219 35. To what extent are staff assistance visits helpful in achieving job performance?
- 220 36. To what extent are your job performance goals clear and specific?
- 221 37. To what extent are your job performance goals realistic?
- 222 38. To what extent do you use Management Information Systems (e.g., Computer Printouts, reports, etc.) to make decisions in your job?
- 223 39. How much of your time is used for planning more than 6 months ahead?
- 224 40. How much of your time is used for weekly or monthly planning?
- 225 41. How much of your time is used for daily planning?
- 226 42. To what extent do you perform the same tasks repeatedly within a short period of time?
- 227 43. To what extent are you faced with the same type of problem on a weekly basis?
- 228 44. To what extent are tasks you perform easy to accomplish?
- 229 45. To what extent is planning modified to meet changing job related needs? Changing environment?
- 230 46. To what extent does your job keep you busy?
- 231 47. To what extent are the people affected by decisions asked for their ideas?
- 232 48. To what extent is the amount of information you get from other work groups adequate to meet your job needs?

1 = Not at all
2 = To a very little extent
3 = To a little extent
4 = To a moderate extent

5 = To a fairly large extent
6 = To a great extent
7 = To a very great extent

- 233 49. To what extent do you know what the objectives of your organization are?
- 234 50. To what extent are you aware of promotion/advancement opportunities that affect you?
- 235 51. To what extent is your work group involved in establishing goals?
- 236 52. To what extent does your work group solve problems effectively?
- 237 53. To what extent does your work group perform effectively under pressure?
- 238 54. To what extent do coworkers in your work group maintain high standards of performance?
- 239 55. To what extent do you have the opportunity to progress up your career ladder?
- 240 56. To what extent are you being prepared to accept increased responsibility?
- 241 57. To what extent do people who perform well receive recognition?
- 242 58. To what extent do you feel adequately trained to perform your assigned tasks?
- 243 59. To what extent are you satisfied with your job?
- 244 60. To what extent does your work give you pride and feeling of self-worth?
- 245 61. To what extent does your supervisor provide the assistance you need to manage your work?
- 246 62. My supervisor asks for ideas before making decisions.
- 247 63. To what extent does your supervisor encourage the people in your work group to work as a team?
- 248 64. To what extent does your supervisor allow you to make decisions concerning your job?

Variable	24 F0201	25 F0202	26 F0203	27 F0204	28 F0205	29 F0206	30 F0207	31 F0208	32 F0209	33 F0210	34 F0211	35 F0212	36 F0213	37 F0214	38 F0215
24 F0201	1.0000	.4586	.4207	.2735	.3777	.0875	.1489	.0669	.3690	.3962	.2779	.6333	.3063	.3563	.4610
25 F0202	.4586	1.0000	.3860	.2284	.3265	.0656	.1921	.1213	.3548	.3431	.4017	.4042	.2463	.3001	.3244
26 F0203	.4207	.3860	1.0000	.1980	.3439	.0176	.1839	.0993	.3672	.6136	.3250	.3709	.1986	.2887	.4058
27 F0204	.2735	.2284	.1980	1.0000	.4355	-.1036	.2323	.1299	.3791	.2444	.3386	.2667	.6784	.5523	.3379
28 F0205	.3777	.3265	.3439	.4355	1.0000	-.0647	.2571	.1759	.5866	.3786	.3883	.3800	.4198	.4672	.4532
29 F0206	.0875	.0656	.0176	-.1036	-.0647	1.0000	-.1297	-.1189	-.0803	-.0091	-.1297	.0811	-.1019	-.1022	-.0930
30 F0207	.1489	.1921	.1839	.2323	.2571	-.1297	1.0000	.3567	.3109	.1899	.3000	.1611	.2445	.2841	.2523
31 F0208	.0669	.1213	.0993	.1299	.1759	-.1189	.3567	1.0000	.2725	.1319	.2121	.0849	.1674	.1875	.1546
32 F0209	.3690	.3548	.3672	.3791	.5866	-.0803	.3109	.2725	1.0000	.4462	.4434	.3791	.4189	.4960	.4895
33 F0210	.3962	.3431	.6136	.2444	.3786	-.0091	.1899	.1319	.4462	1.0000	.3921	.3965	.2512	.3332	.4597
34 F0211	.2779	.4017	.3250	.3386	.3883	-.1297	.3000	.2121	.4434	.3921	1.0000	.3038	.3762	.3793	.3596
35 F0212	.6333	.4042	.3709	.2667	.3800	.0811	.1611	.0849	.3791	.3965	.3038	1.0000	.3453	.3847	.4722
36 F0213	.3063	.2463	.1986	.6784	.4198	-.1019	.2445	.1674	.4189	.2512	.3762	.3453	1.0000	.6504	.4018
37 F0214	.3563	.3001	.2887	.5523	.4672	-.1022	.2841	.1875	.4960	.3332	.3793	.3847	.6504	1.0000	.4839
38 F0215	.4610	.3244	.4058	.3379	.4532	-.0930	.2523	.1546	.4895	.4597	.3596	.4722	.4018	.4839	1.0000
39 F0216	.2780	.2237	.2618	.2057	.2871	-.0384	.2046	.1493	.3058	.2788	.2521	.2746	.2390	.2940	.4093
40 F0217	.2236	.2522	.3063	.1896	.3667	-.1191	.2502	.2320	.4247	.3491	.3449	.2239	.2436	.3475	.4021
41 F0218	.2110	.1107	.1261	.0283	.0603	.1927	-.0500	-.0752	.0308	.0921	-.0231	.2612	.0416	.0691	.0811
42 F0219	.1351	.0899	.1205	.1967	.2172	-.0380	.1187	.0904	.1848	.1703	.1566	.1580	.1974	.2246	.2217
43 F0220	.2285	.2433	.2843	.2079	.3791	-.1323	.2907	.2470	.4354	.3223	.3582	.2246	.2694	.3576	.3964
44 F0221	.2606	.2569	.3078	.2946	.3987	-.1526	.3004	.2362	.4392	.3361	.3759	.2746	.3374	.3878	.4633
45 F0222	.1943	.1441	.2148	.2693	.2372	.0094	.1927	.0653	.2157	.2191	.1970	.2259	.2310	.2558	.2311
46 F0223	.1971	.1013	.1154	.2548	.1836	.0317	.0894	.0160	.1513	.1577	.1224	.2425	.2429	.2093	.2163
47 F0224	.2251	.1520	.1873	.2786	.2359	.0545	.1388	.0315	.2059	.2166	.1659	.2625	.2373	.2499	.2516
48 F0225	.2029	.1617	.2222	.1546	.1984	.0557	.1003	.0263	.2119	.2310	.1459	.2257	.1202	.1850	.2293
49 F0226	-.0938	.0387	.0686	-.1674	-.0516	.0529	-.0377	-.0197	-.0353	.0357	-.0045	-.1416	-.1477	-.1344	-.1064
50 F0227	-.0330	.0576	.0720	-.1127	-.0452	.1009	-.0436	-.0200	-.0247	.0392	-.0261	-.0559	-.0896	-.1005	-.0918
51 F0228	-.1529	-.0270	-.0355	.0129	-.0103	-.0907	.0617	.0856	.0146	.0020	.0755	-.2099	.0043	.0002	-.0544
52 F0229	.2430	.1578	.1832	.2180	.2257	.0195	.1563	.0908	.2335	.2011	.1525	.2529	.2207	.2610	.2456
53 F0230	.4312	.3319	.3519	.2071	.3132	.1128	.1358	.0503	.3111	.3764	.2442	.4127	.2345	.2921	.4061
54 F0231	.3142	.2086	.2562	.3414	.3394	-.0392	.1978	.1016	.3302	.3139	.2656	.3282	.3418	.3993	.3515
55 F0232	.2229	.1670	.2371	.2508	.2859	-.0359	.2115	.1635	.3162	.2749	.2557	.2495	.2522	.2811	.3030
56 F0233	.2373	.2106	.3158	.2458	.3157	-.0751	.2728	.1848	.3491	.3462	.2731	.2594	.2628	.3391	.3552
57 F0234	.1931	.1606	.1990	.2180	.2555	-.0743	.2109	.1529	.2836	.2362	.2159	.1944	.2201	.2689	.2576
58 F0235	.2686	.2051	.2538	.3146	.3457	-.0620	.2190	.1426	.3513	.3292	.2870	.2780	.3271	.3560	.3852
59 F0236	.2905	.2414	.2726	.2859	.3318	-.1016	.2502	.1755	.3732	.3086	.3137	.3037	.3074	.3527	.3869
60 F0237	.2689	.2303	.2877	.1834	.2615	-.0685	.2092	.1542	.3279	.3037	.2703	.2760	.2193	.2950	.3611
61 F0238	.2856	.2108	.2824	.2496	.3296	-.0930	.2715	.1755	.3518	.2939	.3188	.3035	.2720	.3316	.3790
62 F0239	.1933	.1324	.1874	.1690	.2414	-.0920	.1932	.1222	.2634	.1929	.1921	.1999	.1796	.2643	.2819
63 F0240	.3150	.2207	.2485	.2438	.3065	-.0329	.2067	.1440	.3454	.2990	.2408	.3142	.2633	.3623	.3841
64 F0241	.2553	.1372	.1914	.3398	.3462	-.1048	.2743	.1581	.3663	.2461	.2642	.2785	.3484	.3993	.3780
65 F0242	.2503	.2276	.2497	.2434	.2992	-.0817	.2649	.1896	.3446	.2816	.3038	.2743	.2652	.3312	.3727
66 F0243	.4111	.2707	.3282	.3612	.4378	-.1231	.2660	.1841	.4472	.3723	.3481	.4007	.3980	.4615	.7053
67 F0244	.4541	.3039	.3818	.3624	.4634	-.1059	.2754	.1620	.4825	.4289	.3608	.4618	.4141	.4794	.7599
68 F0245	.2229	.1782	.1893	.2513	.3185	-.1353	.2709	.1787	.3503	.2190	.2656	.2145	.2830	.3351	.3673
69 F0246	.2573	.1935	.2041	.3484	.3184	-.0786	.2251	.1171	.3315	.2345	.2560	.2569	.3694	.4310	.3565
70 F0247	.2299	.1727	.2123	.2416	.2944	-.1128	.2399	.1476	.3379	.2605	.2216	.2073	.2600	.3377	.3448
71 F0248	.3144	.2647	.2584	.4660	.4023	-.0885	.2519	.1479	.4476	.2857	.3233	.3145	.5025	.6232	.4382

APPENDIX C: JOB INVENTORY INTERCORRELATION MATRIX

	39 F0216	40 F0217	41 F0218	42 F0219	43 F0220	44 F0221	45 F0222	46 F0223	47 F0224	48 F0225	49 F0226	50 F0227	51 F0228	52 F0229	53 F0230	54 F0231	55 F0232	56 F0233
0	.2780	.2236	.2110	.1351	.2285	.2606	.1943	.1971	.2251	.2029	-.0938	-.0330	-.1529	.2430	.4312	.3142	.2229	.2373
1	.2237	.2522	.1107	.0899	.2433	.2569	.1441	.1013	.1520	.1617	.0387	.0576	-.0270	.1578	.3319	.2086	.1670	.2106
2	.2618	.3063	.1261	.1205	.2843	.3078	.2148	.1154	.1873	.2222	.0686	.0720	-.0355	.1832	.3519	.2562	.2371	.3158
3	.2057	.1896	.0283	.1967	.2079	.2946	.2693	.2548	.2786	.1546	-.1674	-.1127	.0129	.2180	.2071	.3414	.2508	.2458
4	.2871	.3667	.0603	.2172	.3791	.3987	.2372	.1836	.2359	.1984	-.0516	-.0452	-.0103	.2257	.3132	.3394	.2859	.3157
5	-.0384	-.1191	.1927	-.0380	-.1323	-.1526	.0094	.0317	.0545	.0557	.0529	.1009	-.0907	.0195	.1128	-.0392	-.0359	-.0751
6	.2046	.2502	-.0500	.1187	.2907	.3004	.1927	.0894	.1388	.1003	-.0377	-.0436	.0617	.1563	.1358	.1978	.2115	.2728
7	.1493	.2320	-.0752	.0904	.2470	.2362	.0653	.0160	.0315	.0263	-.0197	-.0200	.0856	.0908	.0503	.1016	.1635	.1848
8	.3058	.4247	.0308	.1848	.4354	.4392	.2157	.1513	.2059	.2119	-.0353	-.0247	.0146	.2335	.3111	.3302	.3162	.3491
9	.2788	.3491	.0921	.1703	.3223	.3361	.2191	.1577	.2166	.2310	.0357	.0392	.0020	.2011	.3764	.3139	.2749	.3462
10	.2521	.3449	-.0231	.1566	.3582	.3759	.1970	.1224	.1659	.1459	-.0045	-.0261	.0755	.1525	.2442	.2656	.2557	.2731
11	.2746	.2239	.2612	.1580	.2246	.2746	.2259	.2425	.2625	.2257	-.1416	-.0559	-.2099	.2529	.4127	.3282	.2495	.2594
12	.2390	.2436	.0416	.1974	.2694	.3374	.2310	.2429	.2373	.1202	-.1477	-.0896	.0043	.2207	.2345	.3418	.2522	.2628
13	.2940	.3475	.0691	.2246	.3576	.3878	.2558	.2093	.2499	.1850	-.1344	-.1005	.0002	.2610	.2921	.3993	.2811	.3391
14	.4093	.4021	.0811	.2217	.3964	.4633	.2311	.2163	.2516	.2293	-.1064	-.0918	-.0544	.2456	.4061	.3515	.3030	.3552
15	1.0000	.3299	.1269	.1675	.3079	.3043	.2156	.1549	.2025	.1733	-.0399	-.0186	-.0206	.2164	.2977	.2944	.2738	.2875
16	.3299	1.0000	-.0402	.1199	.5865	.4559	.1412	.0752	.1171	.1337	.0890	.0360	.1353	.1225	.2532	.2503	.2412	.3941
17	.1269	-.0402	1.0000	.1100	-.0694	-.0562	.0933	.1631	.1613	.1089	-.0599	.0447	-.2787	.1419	.2076	.1119	.0606	.0370
18	.1675	.1199	.1100	1.0000	.1705	.1967	.2497	.2341	.2500	.1809	-.0468	-.0536	.0218	.1663	.1390	.2281	.2371	.1708
19	.3079	.5865	-.0694	.1705	1.0000	.6195	.1642	.1070	.1543	.1559	.0714	-.0000	.1197	.1574	.2469	.2665	.2767	.4044
20	.3043	.4559	-.0562	.1967	.6195	1.0000	.2231	.1551	.1999	.1666	-.0187	-.0435	.0862	.1922	.2596	.3104	.3005	.3735
21	.2156	.1412	.0933	.2497	.1642	.2231	1.0000	.3294	.3801	.2768	-.0146	-.0015	-.0066	.2319	.2042	.2793	.2741	.2384
22	.1549	.0752	.1631	.2341	.1070	.1551	.3294	1.0000	.5519	.2235	-.1479	-.0928	-.0752	.2363	.1650	.2670	.1986	.1735
23	.2025	.1171	.1613	.2500	.1543	.1999	.3801	.5519	1.0000	.5589	-.0297	.0341	-.0536	.3147	.2143	.3118	.2604	.2307
24	.1733	.1337	.1089	.1809	.1559	.1666	.2768	.2235	.5589	1.0000	.1196	.1070	-.0068	.2668	.2111	.2443	.2188	.1910
25	-.0399	.0890	-.0599	-.0468	.0714	-.0187	-.0146	-.1479	-.0297	.1196	1.0000	.5513	.2850	-.0427	-.0114	-.0857	-.0378	.0083
26	-.0186	.0360	.0447	-.0536	-.0000	-.0435	-.0015	-.0928	.0341	.1070	.5513	1.0000	.1938	.0274	.0374	-.0474	-.0274	.0050
27	-.0206	.1353	-.2787	.0218	.1197	.0862	-.0066	-.0752	-.0536	-.0068	.2850	.1938	1.0000	-.0162	-.1160	-.0330	.0305	.0548
28	.2164	.1225	.1419	.1663	.1574	.1922	.2319	.2363	.3147	.2668	-.0427	.0274	-.0162	1.0000	.2384	.3364	.2669	.2138
29	.2977	.2532	.2076	.1390	.2469	.2596	.2042	.1650	.2143	.2111	-.0114	.0374	-.1160	.2384	1.0000	.3159	.2392	.2868
30	.2944	.2503	.1119	.2281	.2665	.3104	.2793	.2670	.3118	.2443	-.0857	-.0474	-.0330	.3364	.3159	1.0000	.4204	.3227
31	.2738	.2412	.0606	.2371	.2767	.3005	.2741	.1986	.2604	.2188	-.0378	-.0274	.0305	.2669	.2392	.4204	1.0000	.3394
32	.2875	.3941	.0370	.1708	.4044	.3735	.2384	.1735	.2307	.1910	.0083	.0050	.0548	.2138	.2868	.3227	.3394	1.0000
33	.2675	.2811	.0539	.1480	.3090	.3069	.1927	.1633	.2303	.1764	-.0200	.0182	.0508	.2024	.1486	.2761	.2627	.4597
34	.2800	.3237	.0387	.2633	.3445	.3617	.2548	.2694	.3018	.2413	-.0498	-.0776	.0165	.2593	.2818	.3989	.3509	.3824
35	.3519	.3428	.0222	.1943	.3771	.3755	.2256	.1488	.2060	.1884	-.0514	-.0469	.0329	.2362	.2722	.3633	.3498	.3803
36	.3089	.3322	.0184	.1013	.3428	.3284	.1496	.0659	.1332	.1635	.0363	.0355	.0427	.1899	.2553	.2749	.2475	.3490
37	.3194	.3207	.0524	.1538	.3438	.3485	.2017	.1327	.1919	.1656	-.0160	-.0170	.0244	.2067	.2963	.3197	.2922	.3425
38	.2190	.2143	.0332	.1998	.2660	.2853	.1665	.1292	.1947	.1759	-.0393	-.0014	.0001	.1872	.1505	.2668	.2307	.2443
39	.3076	.3149	.0588	.2213	.3397	.3373	.2281	.1978	.2471	.2429	-.0526	-.0327	-.0044	.2420	.2588	.3520	.2918	.3152
40	.3253	.2786	.0457	.2497	.3467	.3626	.2421	.2480	.2983	.2169	-.1304	-.0936	-.0042	.2706	.2178	.4194	.3419	.3392
41	.2408	.4007	-.0529	.0999	.3632	.3476	.1372	.1359	.1677	.1505	.0200	.0049	.0945	.1565	.2514	.2514	.2141	.3577
42	.3798	.3866	.0466	.2226	.3956	.4496	.2362	.2185	.2408	.2159	-.1481	-.1433	-.0402	.2586	.3631	.3764	.3153	.3413
43	.3867	.3895	.0686	.2457	.3949	.4635	.2551	.2401	.2701	.2368	-.1310	-.1168	-.0578	.2655	.4128	.3855	.3299	.3736
44	.4387	.3908	-.0156	.1958	.3837	.3713	.1823	.1614	.2012	.1736	-.0377	-.0439	.0497	.2389	.1977	.3159	.3089	.3183
45	.3465	.3071	.0549	.2008	.3190	.3184	.2528	.2517	.2830	.2042	-.1129	-.0643	-.0378	.2638	.2196	.4106	.3173	.3230
46	.3713	.3533	-.0050	.1849	.3662	.3374	.1815	.1975	.2343	.2008	-.0313	-.0276	.0284	.2625	.2108	.3340	.3398	.3163
47	.3340	.3636	.0260	.1935	.3619	.3931	.2567	.2042	.2771	.2208	-.0925	-.0680	-.0046	.2746	.2917	.4088	.3290	.3609

56 F0233	57 F0234	58 F0235	59 F0236	60 F0237	61 F0238	62 F0239	63 F0240	64 F0241	65 F0242	66 F0243	67 F0244	68 F0245	69 F0246	70 F0247	71 F0248
.2373	.1931	.2686	.2905	.2689	.2856	.1933	.3150	.2553	.2503	.4111	.4541	.2229	.2573	.2299	.3144
.2106	.1606	.2051	.2414	.2303	.2108	.1324	.2207	.1372	.2276	.2707	.3039	.1782	.1935	.1727	.2647
.3158	.1990	.2538	.2726	.2877	.2824	.1874	.2485	.1914	.2497	.3282	.3818	.1893	.2041	.2123	.2584
.2458	.2180	.3146	.2859	.1834	.2496	.1690	.2438	.3398	.2434	.3612	.3624	.2513	.3484	.2416	.4660
.3157	.2555	.3457	.3318	.2615	.3296	.2414	.3065	.3462	.2992	.4378	.4634	.3185	.3184	.2944	.4023
-.0751	-.0743	-.0620	-.1016	-.0685	-.0930	-.0920	-.0329	-.1048	-.0817	-.1231	-.1059	-.1353	-.0786	-.1128	-.0885
.2728	.2109	.2190	.2502	.2092	.2715	.1932	.2067	.2743	.2649	.2660	.2754	.2709	.2251	.2399	.2519
.1848	.1529	.1426	.1755	.1542	.1755	.1222	.1440	.1581	.1896	.1841	.1620	.1787	.1171	.1476	.1479
.3491	.2836	.3513	.3732	.3279	.3518	.2634	.3454	.3663	.3446	.4472	.4825	.3503	.3315	.3379	.4476
.3462	.2362	.3292	.3086	.3037	.2939	.1929	.2990	.2461	.2816	.3723	.4289	.2190	.2345	.2605	.2857
.2731	.2159	.2870	.3137	.2703	.3188	.1921	.2408	.2642	.3038	.3481	.3608	.2656	.2560	.2216	.3233
.2594	.1944	.2780	.3037	.2760	.3035	.1999	.3142	.2785	.2743	.4007	.4618	.2145	.2569	.2073	.3145
.2628	.2201	.3271	.3074	.2193	.2720	.1796	.2633	.3484	.2652	.3980	.4141	.2830	.3694	.2600	.5025
.3391	.2689	.3560	.3527	.2950	.3316	.2643	.3623	.3993	.3312	.4615	.4794	.3351	.4310	.3377	.6232
.3552	.2576	.3852	.3869	.3611	.3790	.2819	.3841	.3780	.3727	.7053	.7599	.3673	.3565	.3448	.4382
.2875	.2675	.2800	.3519	.3089	.3194	.2190	.3076	.3253	.2408	.3798	.3867	.4387	.3465	.3713	.3340
.3941	.2811	.3237	.3428	.3322	.3207	.2143	.3149	.2786	.4007	.3866	.3895	.3908	.3071	.3533	.3636
.0370	.0539	.0387	.0222	.0184	.0524	.0332	.0588	.0457	-.0529	.0466	.0686	-.0156	.0549	-.0050	.0260
.1708	.1480	.2633	.1943	.1013	.1538	.1998	.2213	.2497	.0999	.2226	.2457	.1958	.2008	.1849	.1935
.4044	.3090	.3445	.3771	.3428	.3438	.2660	.3397	.3467	.3632	.3956	.3949	.3837	.3190	.3662	.3619
.3735	.3069	.3617	.3755	.3284	.3485	.2853	.3373	.3626	.3476	.4496	.4635	.3713	.3184	.3374	.3931
.2384	.1927	.2548	.2256	.1496	.2017	.1665	.2281	.2421	.1372	.2362	.2551	.1823	.2528	.1815	.2567
.1735	.1633	.2694	.1488	.0659	.1327	.1292	.1978	.2480	.1359	.2185	.2401	.1614	.2517	.1975	.2042
.2307	.2303	.3018	.2060	.1332	.1919	.1947	.2471	.2983	.1677	.2408	.2701	.2012	.2830	.2343	.2771
.1910	.1764	.2413	.1884	.1635	.1656	.1759	.2429	.2169	.1505	.2159	.2368	.1736	.2042	.2008	.2208
.0083	-.0200	-.0498	-.0514	.0363	-.0160	-.0393	-.0526	-.1304	.0200	-.1481	-.1310	-.0377	-.1129	-.0313	-.0925
.0050	.0182	-.0776	-.0469	.0355	-.0170	-.0014	-.0327	-.0936	.0049	-.1433	-.1168	-.0439	-.0643	-.0276	-.0680
.0548	.0508	.0165	.0329	.0427	.0244	.0001	-.0044	-.0042	.0945	-.0402	-.0578	.0497	-.0378	.0284	-.0046
.2138	.2024	.2593	.2362	.1899	.2067	.1872	.2420	.2706	.1565	.2586	.2655	.2389	.2638	.2625	.2746
.2868	.1486	.2818	.2722	.2553	.2963	.1505	.2588	.2178	.2514	.3631	.4128	.1977	.2196	.2108	.2917
.3227	.2761	.3989	.3633	.2749	.3197	.2668	.3520	.4194	.2514	.3764	.3855	.3159	.4106	.3340	.4088
.3394	.2627	.3509	.3498	.2475	.2922	.2307	.2918	.3419	.2141	.3153	.3299	.3089	.3173	.3398	.3290
1.0000	.4597	.3824	.3803	.3490	.3425	.2443	.3152	.3392	.3577	.3413	.3736	.3183	.3230	.3163	.3609
.4597	1.0000	.3144	.3010	.2907	.2855	.4052	.3621	.3883	.2878	.2715	.2671	.3014	.3073	.3117	.3071
.3824	.3144	1.0000	.5101	.3407	.3550	.2794	.3776	.3991	.2719	.4066	.4162	.3627	.3504	.3791	.3623
.3803	.3010	.5101	1.0000	.5852	.5189	.2671	.3470	.3714	.3147	.4014	.4013	.4266	.3969	.4289	.4381
.3490	.2907	.3407	.5852	1.0000	.5608	.2400	.3039	.2875	.3313	.3271	.3593	.3602	.3058	.3526	.3412
.3425	.2855	.3550	.5189	.5608	1.0000	.2947	.3254	.3704	.3441	.3793	.3996	.3821	.3380	.3699	.3661
.2443	.4052	.2794	.2671	.2400	.2947	1.0000	.5225	.4185	.1917	.3476	.3228	.3087	.2922	.2876	.2755
.3152	.3621	.3776	.3470	.3039	.3254	.5225	1.0000	.4632	.3045	.4307	.4202	.3869	.3827	.3856	.3931
.3392	.3883	.3991	.3714	.2875	.3704	.4185	.4632	1.0000	.3060	.4573	.4423	.4523	.4866	.4491	.4572
.3577	.2878	.2719	.3147	.3313	.3441	.1917	.3045	.3060	1.0000	.3917	.3886	.3189	.2991	.2870	.3603
.3413	.2715	.4066	.4014	.3271	.3793	.3476	.4307	.4573	.3917	1.0000	.8127	.4453	.4073	.3943	.4700
.3736	.2671	.4162	.4013	.3593	.3996	.3228	.4202	.4423	.3886	.8127	1.0000	.4314	.4069	.3992	.4761
.3183	.3014	.3627	.4266	.3602	.3821	.3087	.3869	.4523	.3189	.4453	.4314	1.0000	.6032	.6356	.5084
.3230	.3073	.3504	.3969	.3058	.3380	.2922	.3827	.4866	.2991	.4073	.4069	.6032	1.0000	.6562	.6575
.3163	.3117	.3791	.4289	.3526	.3699	.2876	.3856	.4491	.2870	.3943	.3992	.6356	.6562	1.0000	.5753
.3609	.3071	.3623	.4381	.3412	.3661	.2755	.3931	.4572	.3603	.4700	.4761	.5084	.6575	.5753	1.0000