An Application of a Social Psychological Model to the Problem of Occupational Choice*

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*I would like to thank Joseph Woelfel for his enormous contributions to the development of this work. The work of Robert Hunter on computer programming and graphics is also gratefully appreciated.

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The Problem

Although there are minor modifications in the way the model is specified, status attainment researchers have moved toward a social psychological model to explain these processes. Often referred to as the "Wisconsin Model", the theory underlying it focuses attention on the role of interpersonal influence in mediating the effects of structural variables on occupational aspirations. While research to date has proven quite successful, it must be kept in mind that this research has used as the dependent variable level of aspiration (LOA) and not the specific occupational choices of the respondents.

Following Woelfel (1975), this paper will argue, and present evidence to support the argument, that the fundamental processes by which aspiration levels and job choices are made are similar, and that the problem in extending the model to apply to occupational choice is essentially a problem of measuring the key variables. In particular, the measures of status level concepts have been quantitative in nature (the OAS, for example) and this has permitted the researcher to aggregate the multiple and frequently disparate expectation of significant others (SOI) into a single composite variable. Occupational choice research, however, deals with specific job choices and the expectation of others which influences those choices. In this case, the key variables are job names which are discrete nominal categories. This causes difficulties for the measurement of significant other influence (how can the expectation be aggregated?), as well as for the use of more powerful multivariate techniques which rely on interval type data.

The argument presented here claims that the occupational decision making process involves many attributes of occupation in addition to status level, and that the communication of expectation also involves these other attributes. This

being the case, it becomes important to quantify occupations with respect to these other attributes in such a way that the impact of SOI on occupational choice can be precisely measured. While numerous attempts have been made to classify occupations, this has been done in terms of attributes identified by the theorist as being of importance in differentiating among occupational groups. Such attributes, however, may or may not be of importance to the decision making process. What is required then, is a method of measuring the underlying structure of occupation names in such a way that reflects the perceptions of the relevant population. For it is these perceptions that form the corpus of information out of which occupations are evaluated, expectations are formed and communicated, and choices are made. It is my contention that metric multidimensional scaling (MMDS) is the appropriate technique because it precisely measures these perceptions and allows us to portray occupations as a continuum in multidimensional space. Thus, occupation names can be quantified in terms of the coordinates that locate them in such a space. This in turn permits us to utilize well developed models of status attainment to explain occupational choice.

Method

The procedure utilized in this research involved measuring the perceptions of the occupational structure using MMDS, and then incorporating the scale values determined from the technique within a social psychological model to explain occupational choices. In this research, thirty-four occupations were scaled in this manner. The thirty-four were chosen from those occupations most frequently listed by the 150 high school students in the sample as potential job choices. Given the occupation titles, an occupational similarities questionnaire was constructed that asked the respond-nts to estimate the distances between all possible pairs. Given the large number of comparisons, each respondent was

asked to make comparisons on a subset of the pairs selected randomly. The respondents consisted of all the students in the sample plus those persons listed as significant others as elicited by the Wisconsin Significant Other Battery (WISOB). In making the estimates, respondents were given as a standard of comparison the distance between postman and bankteller which was set at 50 units.

The distance estimates that were obtained were then averaged over the number of respondents to yield a mean distance matrix. This matrix was then orthogonally decomposed by standard eigenvalue procedures to yield a spatial coordinate system with the origin at the centroid of the distribution. Each occupation is represented by its ccordinates in this multi-dimensional space. A careful analysis of this space suggests that two attributes are clearly identifiable: the first dimension is clearly a socioeconomic dimension, while the second appears to be a masculine-deminine dimension. There are very likely several other attributes in the space, but they don't correspond clearly to specific dimensions, as should be expected.

The remainder of the data was obtained by using a modified form of the WISOB which elicited data on student background characteristics, their occupational significant others, and their occupational choices. Once the significant others were identified, they were sent a questionnaire which asked them for their job expectations for the appropriate students. Finally, data on the students academic performance and measure of mental ability were obtained from school records.

The Variables

1. Occupational Choice (OC1 - OC3). - This was measured by 4 open ended questions patterned in general after the OAS. The questions ask respondents to list the jobs they think they can get and those they would most like to have on a short range and long range time basis. The choices were given scale scores on each

dimension and then averaged to produce a measure of occupational choice which is quantified as a set of coordinates.

2. Significant Other Influence (SOI) - The expectations that significant others held for ego were measured in the same way as were occupational choices. The set of coordinates for all significant others was then summed and averaged to produce the measure of SOI.

3. Socio economic status (SES) - This was measured by taking a weighted index of father's occupational status, relative wealth and parent's education.

4. SEX

5. Grade point average (GPA)

6. Mental ability (MA1 - MA3) - Three measures that tapped different aspects of ability were used. Overall ability (MA1) is a combination of verbal and quantitative abilities. MA2 measured clerical aptitude, and MA3 mechanical aptitude.

7. Extracurricular Activities (ACT) - Number of activities in which ego participates.

8. Leadership (LEAD) - The extent to which ego considers him/her self a leader in the above activities.

9. Occupational Aspiration Level (OAS) - Measured by the Haller and Miller Occupational Aspiration Scale.

10. Educational Aspiration Level (LEA) - Measured by a two item scale which taps idealistic and realistic dimensions of the aspiration.

11. Significant Others' Educational Expectations (LEX) - This was measured identically to LEA.

In general, the model assumes that the various structural factors exert a causal influence over significant other expectations which then serve as a motivational force on subsequent job choices.

Findings

In the initial analysis prestnted here, the scale scores for Egos' occupational choice on the first 3 dimensions were treated as dependent variables, each of which was regressed on all the independent variables. The table presents the multiple correlations and standardized coefficients for each of the three regression equations. The table also includes the correlation coefficients between the dependent variables and each independent variable.

There are several important findings in this table. First, as might be expected, are the relatively high correlation coefficients between occupational choice and significant other influence. Although this was expected given the theory, the size of the coefficients is nevertheless impressive.

The next thing to notice is the multiple correlation coefficients and the regression coefficients for each equation. The multiple correlations are fairly high and this is surprising in light of the fact that the independent variables that are used were, for the most part, those identified as being of importance in explaining level of aspiration. Thus, the pattern found on OC1 is consistent with previous research on the attainment process. Since the other dimensions reflect different attributes of occupation, it was not expected that this particular set of independent variables would be too successful. Note, however, the importance of sex on OC2. This, too, is sensible in light of the interpretation given to the second dimension. The regression equation for OC3, however, raises a number of problems for interpretation which also occur on subsequent dimensions. Since it is not certain what attribute(s) lie on this dimension, many of the independent variables that are used here may not be theoretically relevant. Hence, caution should be used in interpreting these regression coefficients.

Discussion

The most important implication of these findings is the support they provide

for using a social psychological model to explain occupational choice. The utility of this model, of course, depended on a method for quantifying the key variables, and it is clear from the findings that MMDS was an extremely valuable technique for doing so. Despite the potential that is displayed here, a number of key problems exist that must be resolved before further research along these lines can be done.

1. The most obvious problem is that of identifying the independent variables that are theoretically important in explaining occupational choices on the third and subsequent dimensions. This in turn is dependent upon finding the attributes that underlay the perception of the occupational structure. What is clearly required is a mapping of a much larger domain of occupations in which the data is taken from a national sample. It would also be necessary to include among the objects to be scaled, a set of attributes. Knowing the location and importance of these attributes would then permit researchers to locate other independent variables, quite possibly, attitudes towards these attributes.

2. A second problem that needs to be resolved is the development of an occupational choice scale. There are a number of ways in which this could be done, but it would depend upon obtaining a mapping of a larger domain of occupations as outlined above. The importance of developing such a scale was demonstrated vividly in thhis research, where a number of respondents had to be eliminated from the analysis because their occupational choices did not correspond to the occupations that were scaled.

While a resolution of these problems is essential for further research, it is also extremely worthwhile in light of the findings presented here which relied, for the most part, on fairly crude measures of the key variables.

Table 1. Mean Distance Matrix for Thirty-four Occupations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	0.0																
2	45.3	0.0															
3	91.3	56.9	0.0														
4	84.2	49.8	73.5	0.0													
5	84.4	73.1	93.3	85.4	0.0												
6	117.3	74.7	62.4	39.4	97.3	0.0											
7	71.1	82.4	99.4	80.8	36.1	126.1	0.0										
8	53.1	41.4	75.1	37.6	69.0	68.4	70.8	0.0									
9	92.5	78.9	61.4	62.5	71.8	67.8	80.6	79.5	0.0								
10	48.2	53.8	79.6	38.6	76.9	105.8	75.8	65.1	46.9	0.0							
11	113.5	57.0	51.4	34.7	76.0	25.1	86.9	81.3	63.8	77.3	0.0						
12	64.8	56.1	58.8	51.4	67.0	67.9	74.7	58.3	59.7	59.4	74.3	0.0					
13	71.7	56.6	75.8	64.1	44.7	75.1	36.6	75.3	74.4	73.1	74.7	62.8	0.0				
14	71.1	58.2	94.3	57.7	69.1	103.6	73.9	63.3	95.2	40.4	82.8	69.3	63.2	0.0			
15	83.1	63.2	73.2	70.3	44.6	77.1	45.5	73.3	77.7	78.4	48.2	63.4	41.7	68.1	0.0		
16	105.2	60.0	76.2	73.1	75.4	87.4	84.0	80.7	75.2	80.9	76.4	80.3	64.7	85.3	73.7	0.0	
17	49.7	39.9	95.3	38.8	68.6	90.0	87.3	69.8	103.9	52.6	78.6	78.9	57.7	41.1	57.8	83.7	0.0
18	58.1	60.1	90.7	61.9	87.9	96.0	100.7	67.2	91.6	36.7	82.4	87.8	83.9	53.4	80.5	70.2	71.9
19	84.7	50.0	45.5	41.4	82.9	36.6	109.3	82.7	80.5	76.5	40.1	82.3	65.7	79.7	64.7	96.8	91.8
20	79.8	61.3	63.3	63.2	50.9	70.7	78.3	78.0	71.0	78.7	52.8	58.8	47.7	77.8	41.7	72.7	69.5
21	78.7	79.5	101.2	78.0	36.7	94.8	39.0	86.1	89.4	82.4	82.3	70.4	55.1	68.4	55.9	79.9	73.4
22	80.2	86.6	98.9	88.1	43.1	99.0	47.0	82.5	116.4	78.9	71.1	72.8	48.2	62.8	33.1	72.3	60.5
23	50.0	70.9	99.3	67.9	56.4	95.2	55.9	66.8	116.4	63.0	83.6	72.2	56.5	41.6	65.3	89.5	47.9
24	71.4	81.4	106.8	83.2	33.3	102.1	53.4	71.1	101.3	75.8	91.6	72.9	56.0	44.6	72.6	84.3	55.5
25	66.6	55.3	65.0	85.1	56.9	83.5	57.7	66.7	83.8	75.6	57.5	28.6	56.7	75.1	41.4	74.6	66.4
26	71.8	58.7	57.0	38.3	70.7	49.9	78.9	67.1	76.9	81.5	41.5	61.3	68.2	74.3	69.3	86.5	75.3
27	82.3	52.6	60.8	30.9	68.8	43.5	83.5	60.7	88.1	84.3	40.4	68.8	75.7	78.4	70.0	50.8	69.5
28	53.1	66.6	96.0	53.4	76.5	82.3	71.6	80.5	106.3	63.7	68.2	67.5	66.9	48.5	78.7	82.6	52.5
29	78.7	43.1	74.6	61.3	68.9	71.5	70.9	46.5	90.1	93.7	64.2	58.5	91.8	83.3	70.6	24.6	69.6
30	67.0	63.2	73.6	68.1	72.0	78.1	72.8	61.5	92.5	55.3	71.3	74.3	59.7	69.6	77.8	80.2	41.5
31	83.6	53.3	48.6	46.7	116.5	43.1	96.6	43.5	87.2	67.2	55.4	73.4	88.3	95.9	79.6	83.8	60.4
32	57.1	74.2	89.5	77.1	56.9	100.5	59.4	60.9	107.7	46.6	78.4	68.7	64.4	28.5	61.5	96.0	25.8
33	74.5	80.0	92.4	93.6	39.3	98.1	31.1	72.8	86.5	79.7	73.3	58.3	74.3	64.9	59.2	68.8	67.6
34	49.7	55.5	55.4	78.4	85.3	75.7	96.7	55.4	67.8	74.6	70.3	72.9	67.4	80.3	72.8	83.0	65.5

Table 1. (continued)

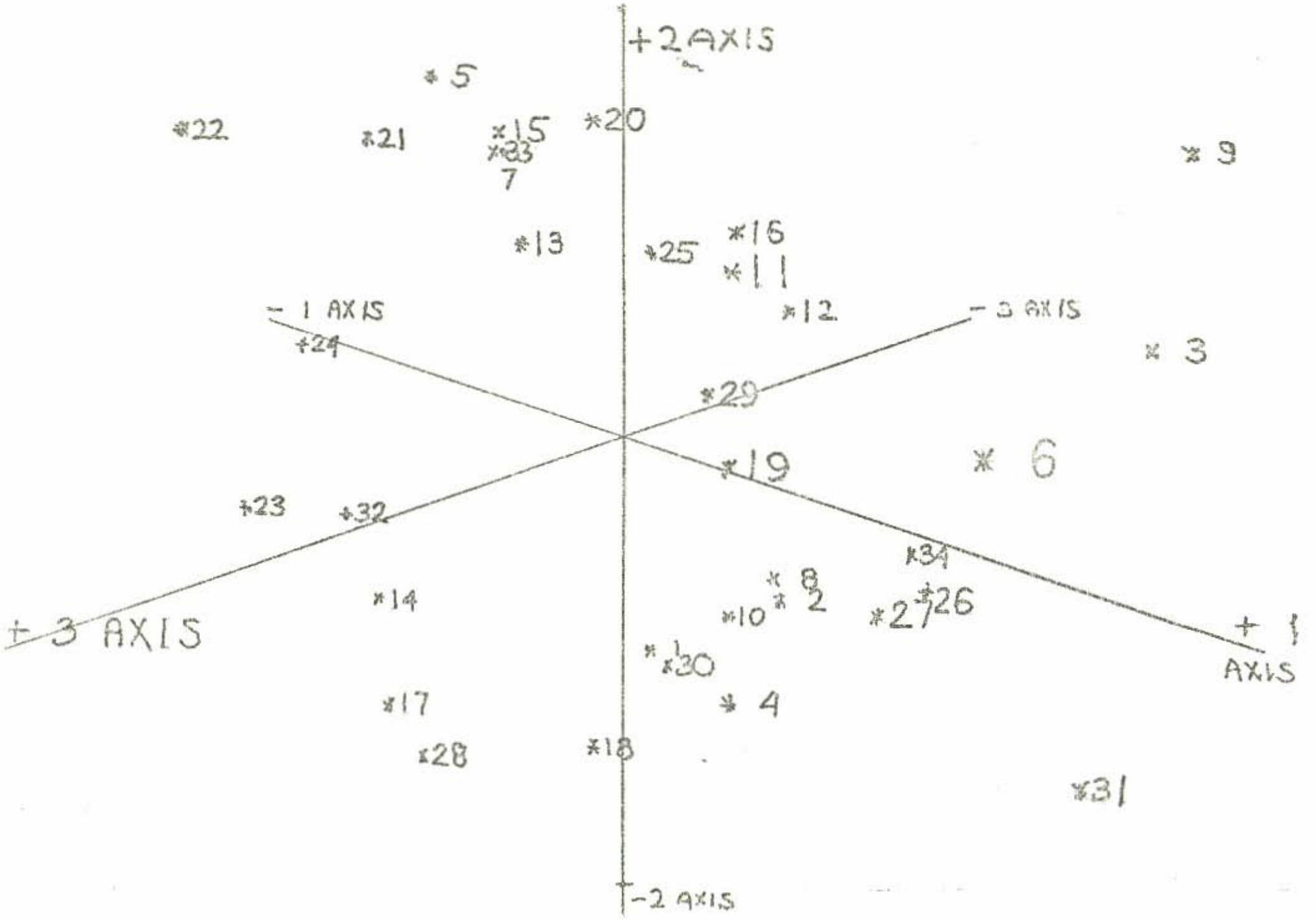
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
18	0.0																
19	79.3	0.0															
20	78.7	50.3	0.0														
21	81.4	80.8	63.6	0.0													
22	76.3	72.4	63.1	44.2	0.0												
23	64.0	88.0	77.8	61.3	52.9	0.0											
24	77.0	87.3	81.8	46.6	37.2	30.0	0.0										
25	72.7	57.8	21.4	65.9	48.5	69.1	82.8	0.0									
26	79.0	42.2	74.1	104.6	100.9	87.9	116.4	63.9	0.0								
27	77.0	49.7	68.2	88.3	110.9	87.9	107.3	74.0	38.7	0.0							
28	45.0	76.8	74.9	80.4	96.4	59.0	67.0	68.5	51.3	59.5	0.0						
29	66.5	63.5	74.2	78.2	86.2	91.5	70.7	57.1	59.9	55.3	77.0	0.0					
30	52.3	73.8	89.6	85.0	91.5	79.6	80.2	60.1	61.1	77.0	56.9	80.1	0.0				
31	78.4	55.2	93.0	96.5	116.5	107.7	93.4	63.9	57.0	39.5	81.0	73.1	74.7	0.0			
32	69.2	83.4	72.5	55.2	49.6	48.8	62.3	61.6	87.7	88.3	59.1	76.5	69.0	92.4	0.0		
33	83.4	84.0	68.8	35.5	61.3	61.9	52.7	59.1	83.4	95.2	78.6	78.8	88.4	95.1	64.1	0.0	
34	59.2	75.2	83.5	87.2	90.8	83.6	80.3	59.2	65.2	70.8	87.5	83.3	65.2	54.6	78.1	83.3	0.0

NOTE: Occupations are:

1. Secretary
2. Teacher
3. Lawyer
4. Nurse
5. Mechanic
6. Doctor
7. Construction Work
8. Social Work
9. Pilot
10. Stewardess
11. Veternarian
12. Policeman
13. Carpenter
14. Waitress
15. Rancher
16. Pro Athlete
17. Housewife
18. Model
19. Biologist
20. Forest Ranger
21. Truck Driver
22. Ranch Hand
23. Store Clerk
24. Gas Station Attendant
25. Game Warden
26. Lab Technician
27. Physical Therapist
28. Beautician
29. Athletic Coach
30. Interior Decorator
31. Psychologist
32. Cook
33. Railroad Worker
34. Writer

Table 2. Spatial Coordinates for Thirty-four Occupations

OCCUPATION	DIMENSION I	II	III
Secretary	-21.2	-42.3	-25.7
Teacher	15.8	-15.4	- 4.9
Lawyer	44.3	13.2	-17.7
Nurse	27.1	-13.5	15.4
Mechanic	-33.2	30.5	- 3.9
Doctor	55.9	18.9	27.5
Construction Work	-42.8	19.5	-22.0
Social Worker	7.9	-18.7	-13.9
Pilot	30.1	24.2	-51.3
Stewardess	- 7.0	-32.1	-24.2
Veternarian	32.6	25.2	22.8
Policeman	4.4	8.9	-19.3
Carpenter	-14.9	16.0	0.0
Waitress	-27.3	-24.4	11.3
Rancher	-10.1	28.3	6.7
Pro Athlete	7.5	19.6	- 6.8
Housewife	-16.5	-30.1	18.4
Model	- 2.7	-36.3	2.2
Biologist	33.3	11.1	23.5
Forest Ranger	1.7	30.4	5.7
Truck Driver	-37.3	24.2	2.1
Ranch Hand	-47.4	25.9	18.6
Store Clerk	-40.9	-14.9	19.2
Gas Station Attendant	-48.2	- 0.3	5.6
Game Warden	- 2.9	15.9	- 5.9
Lab Technician	38.2	- 4.3	4.9
Physical Therapist	40.1	- 1.5	13.9
Beautician	- 5.6	-29.5	22.8
Athletic Coach	13.8	7.4	3.8
Interior Decorator	4.4	-25.3	- 1.3
Psychologist	49.5	-20.5	- 3.5
Cook	-34.2	-16.4	10.5
Railroad Worker	-32.2	21.9	-11.0
Writer	17.9	-15.9	-23.6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*4
*17
*28
*18
*31

Multiple Correlations, Standardized Eoefficients and Correlation Coefficients

Independent Variables	Dependent Variables					
	OC1		OC2		OC3	
	B	r	B	r	B	r
Sex	-.046	.11	-.397*	-.88	.097	.10
SES	.180	.15	.126*	.21	.133	.14
MA1	.237	.26	.047	-.03	-.233	.07
MA2	-.066	.06	.054	-.40	-.020	.01
MA3	-.149	-.15	.012	.56	.263*	.14
GPA	-.074	.30	-.020	-.31	.241	.17
ACT	-.154	.05	-.083	-.25	.201	.25
LEAD	.028	.03	.020	.10	.033	.11
LEA	.176	.41	.018	-.15	.071	.07
OAS	.219*	.42	-.061	-.13	-.240*	-.15
LEX	-.063	.39	-.032	-.18	.122	.22
SOI	.520*	.51	.517*	.88	.438*	.51
R	.73*		.92*		.66*	
R^2	.53		.86		.44	

*Significant at .05 level