CHAPTER V

FINDINGS

Statistical Analyses

SPSS, version 8.0 for Windows, supported the quantitative analyses (descriptive and logistic regression analysis). The reliability of the scales and sub-scales were examined with Cronbach's alpha coefficient and item-total correlations (see methodology chapter). To examine relations between demographic variables, rank, and sense of coherence measures I performed bivariate correlations (Pearson Correlation). Linear regression analysis and independent samples t-tests examined correlations between self-rated health, objective SES, rank, and sense of coherence scores. The construct validity of the presumed influence of one's subjective experience of rank on health was evaluated by contrasting two groups that differ strongly in rank or SOC scores (medium split). Hierarchical regressions examined if the index of marginality helped in the prediction of self-rated health over and above the effect of externalized social rank. The measure of objective SES took an average of the available SES indices, so that those with missing data had a standardized SES score reflecting the SES markers.

Because of expected differences between the U.S. and Swiss sample I decided to analyze the two surveys separately. This procedure allowed me to compare two demographically and ethnically distinct groups.

Reliability of the Indices

Index of Self-rated Health

Two internal consistency estimates of reliability were computed for index of self-rated health: coefficient alpha and split half coefficient expressed as a Spearman-Brown corrected correlation. For the split half coefficient, the scale was split into two halves such that the two halves would be as equivalent as possible. The first half include items 1,2, and 5, while the other half included items 3 and 4. The value for Cronbach alpha was 0.81 and the Unequal-length Spearman-Brown coefficient was 0.84, indicating satisfactory reliability.

Index of Objective Social Status

The internal consistency estimates of reliability for the index of objective social status was 0.63 (Cronbach alpha). The corrected item total correlations for the variable education was $\underline{r} = 0.36$, for the variable occupation $\underline{r} = 0.50$, and for the variable income $\underline{r} = 0.43$. This relatively low consistency and the above correlations challenge the validity of this composite index of objective social status. The individual objective social status variables will need to be analyzed separately too.

Index of Subjective Rank

To see if this broad index of subjective rank was meaningful and indeed was measuring a common entity I computed two internal consistency estimates of reliability: coefficient alpha and a split half coefficient expressed as a Spearman-Brown corrected correlation. The value for Cronbach alpha was 0.88 indicating satisfactory reliability.

To measure the relationship between the 28 items hypothesized to assess the perception of rank I conducted an item analysis. Initially, each of the 28 items was correlated with the total score for rank (with the item removed). All the correlations were greater than .30 (a minimal required correlation for the item really measuring what the rest of the scale is trying to measure) except for 5 items: “empowerment by ethnic identity” ($\underline{r}$ = 0.14), “society’s evaluation of ethnic identity” ($\underline{r}$ = 0.15), “society’s evaluation of religious beliefs” ($\underline{r}$ = 0.28), “strength through religious beliefs” ($\underline{r}$ = 0.29), and “society’s evaluation of sexual orientation” ($\underline{r}$ = 0.12). Based on these results the scale was readjusted and the 5 items eliminated. Item-total correlations for the revised 23 item scale yielded only one correlation that was less than .30: “society’s evaluation of age” ($\underline{r}$ = 0.28). Based on this result this item was also eliminated. The low item-total correlations (consistency) for the categories “ethnic identity”, “religious or spiritual beliefs”, and “sexual orientation” might reflect the demographics (white, middle class, and in majority heterosexual) of my survey participants.

Coefficient alpha for the revised 22-item scale of subjective rank was 0.90. For the split half coefficient, the scale was split into two halves such that the two halves would be as equivalent as possible. The first half include items 6, 8, 10, 12, 13, 15, 17, 20, 22, 26, and 31, while the other half included items 7, 9, 11, 14, 16, 19, 21, 25, 29, 32, and 33. The Equal-length Spearman-Brown coefficient for the revised subjective rank scale was 0.89.

Index of Externalized Social Rank

The internal consistency estimate of reliability were calculated for the externalized social rank scale. The value for Cronbach alpha was 0.70 indicating satisfactory reliability. To examine the relationship between the 8 items hypothesized to assess the perception of externalized social rank I conducted an item analysis. Initially, each of the 8 items was correlated with the total score for rank (with the item removed). All the correlations were greater than 0.30 except for 2 items: “society’s evaluation of ethnic identity” ($\underline{r} = 0.17$), and “society’s evaluation of sexual orientation” ($\underline{r} = 0.27$). Based on these results the scale was readjusted and the 2 items eliminated. Coefficient alpha for the revised 6-item scale of externalized social rank was 0.73.

Index of Internalized Social Rank

The internal consistency estimate of reliability were calculated for the internalized social rank scale. The value for Cronbach alpha was 0.65.

Item analyses were conducted on the 8 items hypothesized to assess the perception of internalized social rank. Initially, each of the 8 items was correlated with the total score for rank (with the item removed). All the correlations were greater than 0.30 except for 1 item: “empowerment by ethnic identity” ($\underline{r} = 0.14$). Based on these results the scale was readjusted and the 1 item eliminated.

Coefficient alpha for the revised 7-item scale of internalized social rank was 0.67. The relative low alpha coefficients for the measures of internalized and externalized social rank might reflect the heterogenicity of the variables that compose these two scales.

Index of Psychological Rank

Internal consistency estimates of reliability and item analyses were conducted on the 12 items hypothesized to assess the perception of psychological rank. Initially, each of the 12 items was correlated with the total score for rank (with the item removed). All the correlations were greater than .30 and the value for Cronbach alpha was 0.88.

For the split half coefficient, the scale was split into two halves such that the two halves would be as equivalent as possible. The first half included items 6,8,12,14,16, and 20, while the other half included items 7,9,13,15,17, and 33. Equal-length Spearman-Brown coefficient was 0.92, indicating satisfactory reliability.

Index of Sense of Coherence

Item analyses were conducted on the 13 SOC items. Initially, each of the 13 items was correlated with the total SOC score (with the item removed). All the correlations were greater than .30 and the value for Cronbach alpha was 0.84.

Index of Independent/Interdependent Self

The internal consistency estimates of reliability for the index of independent self was 0.31 (Cronbach alpha). The corrected item total correlations for the variable inner

strength were r = 0.05, personal abilities r = 0.33, and feeling of independence r = 0.25. This low consistency and weak relationships mean that the individual values are probably not measuring a common entity.

The internal consistency estimates of reliability for the index of interdependent self was 0.69 (Cronbach alpha). The corrected item total correlations for the variable friendship were r = 0.53, family r = 0.38, community r = 0.51, care for others r = 0.34, the respect of others r = 0.31, and feeling of connectedness r = 0.44. The individual values here show a stronger relationship and consistency than the values of independent self. The index of interdependent self is more reliable than the index of independent self.

Table 1 summarizes the reliability estimates for the various measures of self-rated health, subjective rank, and sense of coherence for the U.S. sample.

Table 1. Reliability estimates for self-rated health, subjective rank, and sense of coherence (U.S. sample)

		Self-rated health	**Subjective rank**	**Externali-zed social rank**	**Internali-zed social rank**	**Psycho-logical rank**	**Sense of coherence**
Reliability	Cronbach alpha	0.81	0.88	0.70	0.65	0.88	0.84
	revised alpha		0.90	0.73	0.67		

The reliability estimates for the Swiss cohort are shown in Table 2. The Cronbach alpha values are comparable to the one's of the U.S. sample. The minimally lower numbers might reflect the smaller sample size. Item analysis of the Swiss sample revealed 4 items with corrected item total correlations under 0.3 for the measure of subjective rank

("freedom to relate to people," "comfort with the way you behave and express yourself," "strength trough religious and spiritual belief," and "society's view of one's religious and spiritual beliefs." It further revealed 2 items with corrected item total correlations under 0.3 for the measure internalized social rank ("comfort with the way you behave and express yourself," and "strength through religious and spiritual belief"), and another 2 items with corrected item total correlations under 0.3 for the measure psychological rank ("freedom to relate to people" and "comfort with strong feelings"). The low item-total correlations (consistency) for the categories relating to communication style might reflect a cultural difference in meaning and understanding of communication and its significance in respect to rank. Further, the respondents in the Swiss sample didn't weigh religious and spiritual beliefs as a source of empowerment. Coefficient alpha for the revised scales are also shown in Table 2.

Table 2. Reliability estimates for self-rated health, subjective rank, and sense of coherence (Swiss cohort)

		Self-rated health	**Subjective rank**	**Externali-zed social rank**	**Internali-zed social rank**	**Psycho-logical rank**	**Sense of coherence**
Reliability	Cronbach alpha	0.78	0.82	0.69	0.57	0.79	0.78
	revised alpha		0.82		0.62	0.82	

U. S. Mail-Survey

Descriptive Statistics

The U.S. sample consisted of 133 participants, approximately 75% of whom were women (N = 101), while the rest were men (N = 32). The mean age of respondents was 52 (SD =

8.3). From the participants 53% were in the age-group between 45 and 55, and 99 % were White with one Black participant and one Hispanic participant. Ten participants checked the category “Other”. Most of these characterized their ethnic identity separately as being from Jewish origin. The respondents’ relationship status was: 27% single, 17% unmarried couple, 32% married, and 23% separated or divorced. As suspected, the sample represented a highly educated group of people. Seventy-nine percent of the participants held a graduate or professional degree. Accordingly 71% characterized themselves as higher grade professionals. The income level was more varied with 19% earning between $10'001-20'000, 25% between $20'001-35'000, 17% between $35'001-50'000, and 26% between $50'001-100'000. From the respondents 50% reported being self-employed, 27% were either full-time or part-time employed for wages or salary, and 21% reported being either unemployed (4%), unable to work (4.5%), homemaker (1.5%), student (3%), or retired (8.3%). The majority (65%) of the sample described their sexual orientation as exclusively heterosexual, 20% as mostly heterosexual with either marked or occasional homosexual experiences, 7% as exclusively homosexual, another 6% as homosexual with either marked or occasional heterosexual experiences, and 1.5% as truly bisexual.

Quantitative Analysis of Self-rated Health; Subjective Rank, Sense of Coherence, and Objective SES Scores Within Levels of Qualitative Demographic Variables

Table 3 outlines the bivariate correlations between demographic variables and self reported health, rank, SOC, and objective SES indices. It summarizes the relationships found between demographic variables and my indices of self-rated health and subjective social status. I describe the range of responses (means and standard deviations) in Table 1 of Appendix B.

Table 3. Bivariate correlations for self-rated health, subjective rank, SOC, and objective SES

		Self-rated health	**Subjective rank**	**Externalized social rank**	**Internalized social rank**	**Psychological rank**	**Sense of coherence**	**Objective social status**
Pearson Corrrelation	**age** (N 133)	0.39	0.199*	-0.052	0.135	0.217*	0.175*	0.168
Variances accounted for			*4%*			*4.7%*	*3.1%*	
	gender (N 133)	-0.154	-0.157	-0.343**	-0.111	-0.053	0.019	-0.045
				11.8%				
	objective social status (N 133)	0.213*	0.248**	0.189*	0.124	0.248**	0.151	
		4.5%	***6.1%***	*3.6%*		***6.2%***		
	occupation level (N 130)	0.151	0.262**	0.110	0.190*	0.268**	0.199*	0.696**
			6.9%		*3.6%*	***7.2%***	*3.9%*	***48.5%***
	education level (N 133)	0.089	0.102	0.165	0.023	0.092	0.058	0.718**
								51.5%
	individual income (N 131)	0.213*	0.295**	0.212*	0.196*	0.275**	0.146	0.761**
		4.6%	***8.7%***	*4.5%*	*3.8%*	***7.5%***		***57.9%***
	relationship status (N 133)	0.201*	0.238**	0.059	0.092	0.302**	0.285**	0.175*
		4%	*5.7%*			***9.1%***	***8.1%***	*3%*
	marital status (N 66)	-0.56	0.349**	0.351**	0.400**	0.253*	0.164	0.042
			12.2%	***12.3%***	***16%***	***6.4%***		
	doctor visit (N 129)	0.318**	0.190*	0.175*	0.050	0.197*	0.208*	0.089
		10.1%	*3.6%*	*3.1%*		*3.9%*	*4.3%*	

*. Correlation is significant at the 0.05 level (2-tailed)

**. Correlation is significant at the 0.01 level (2-tailed)

Self-Rated Health

My results show a statistically significant relationship between self-rated health scores and the composite measure of objective social status ($r^1 = 0.21$, $p^2 < 0.05$), and between self-rated health and individual income ($r = 0.20$, $p < 0.05$). They show no correlation between self-rated health and occupation level ($r = 0.15$) nor between self-rated health and education level ($r = 0.09$). This may reflect the fact that most of the subjects in this sample had high levels of education. When respondents who were not engaged in paid employment (N 29) were subtracted a significant correlation of $r = 0.21$, $p < 0.05$ resulted between self-rated health and occupation level. This means that, in this sample, occupation and work status combine in their effect on self-rated health.

Self-rated health scores were further related to relationship status (if regrouped into two categories – one without spouse or partner and one with spouse or partner) ($r = 0.20$, $p < 0.05$). Self-rated health also correlated with the frequency of doctor visit ($r = 0.32$, $p < 0.01$). The variable, frequency of doctor visit, showed the strongest relationship with self-rated health. In this sample 10.1% of the variability in self-rated health may be predicted by knowing the frequency of doctor visit. All the other variables determined less than 6% of the variability in self-rated health.

[1] R is the symbol for the correlation coefficient which ranges from -1 to +1 with -1 describing a perfect negative linear relationship and +1 describing a perfect positive linear relationship.
[2] The P-value describes the probability that the observed result is due to chance alone. A $p < 0.05$ means that there is less than 5% risk that the observed relationship is due to chance alone.

Table 1 in Appendix B summarizes the mean self-rated health scores and their standard deviations (SD) for various demographic variables. Figures B1[3] to B6 document the above mentioned relationships between the participants' self-rated health scores and the various demographic categories.

Subjective Rank

Subjective rank scores were related to the composite measure of objective social status ($r = 0.25$, $p < 0.01$), occupation level ($r = 0.26$, $p < 0.01$), and individual income ($r = 0.29$, $p < 0.01$), but not to education level ($r = 0.10$). They were further related to the respondents age ($r = 0.20$, $p < 0.05$), relationship status (if regrouped into two categories – one without spouse or partner and one with spouse or partner) ($r = 0.24$, $p < 0.01$). Looking at the marital status I found a strong relationship ($r = 0.35$, $p < 0.01$) between the subgroups of married ($N = 43$) and unmarried couples ($N = 23$) and subjective rank scores. Subjective rank was also related to the frequency of doctor visit ($r = 0.19$, $p < 0.05$). Only the variables objective social status, occupation level, individual income, and marital status accounted for a variance in subjective rank grater than 6%. This means, that in this sample, these four variables were the strongest demographic predictors of subjective rank.

Table 1 in Appendix B summarizes the mean subjective rank scores and their standard deviations (SD) for various demographic variables. Figures B7[4] to B13 illustrate the

[3] See Appendix B
[4] See Appendix B

above mentioned relationships between the participants' subjective rank scores and the various demographic categories.

Externalized Social Rank

Externalized social rank scores were related to gender ($r = 0.34$, $p < 0.01$), the composite measure of objective social status ($r = 0.19$, $p < 0.05$), individual income ($r = 0.21$, $p < 0.05$), and to the frequency of doctor visit ($r = 0.17$, $p < 0.05$), but not to occupation level ($r = 0.11$), education level ($r = 0.16$), or relationship status ($r = 0.06$). But looking at the marital status I found a strong relationship ($r = 0.35$, $p < 0.01$) between the subgroups of married ($N = 43$) and unmarried couples ($N = 23$) and externalized social rank scores. Only the variables gender and marital status accounted for a variance in externalized social rank grater than 6%, which means that in this sample they were the strongest demographic predictors of externalized social rank.

Internalized Social Rank

Internalized social rank scores were not related to gender ($r = -0.10$), the composite measure of objective social status ($r = 0.12$), education level ($r = 0.02$), relationship status ($r = 0.09$), or to the frequency of doctor visit ($r = 0.05$). But looking at the marital status I found a strong relationship ($r = 0.40$, $p < 0.01$) between the subgroups of married ($N = 43$) and unmarried couples ($N = 23$) and internalized social rank scores. They were further also related to the participants' occupation level ($r = 0.19$, $p < 0.05$) and individual income ($r = 0.20$, $p < 0.05$). Only the variable marital status accounted for a variance in

internalized social rank grater than 6%, which means that in this sample it was the strongest demographic predictor of internalized social rank.

Table 1 in Appendix B summarizes the mean social rank scores and their standard deviations (SD) for various demographic variables. Figures B14[5] to B24 illustrate the above mentioned relationships between the participants' mean externalized and internalized social rank scores and the various demographic categories.

Psychological Rank

Psychological rank scores were related to the composite measure of objective social status ($r = 0.25$, $p < 0.01$), occupation level ($r = 0.27$, $p < 0.01$), and individual income ($r = 0.27$, $p < 0.01$), but not to education level ($r = 0.09$). They were further related to the respondents age ($r = 0.22$, $p < 0.05$), relationship status (if regrouped into two categories – one without spouse or partner and one with spouse or partner) ($r = 0.30$, $p < 0.01$), and to the frequency of doctor visit ($r = 0.20$, $p < 0.05$). Looking at the marital status I further found a relationship ($r = 0.25$, $p < 0.05$) between the subgroups of married ($N = 43$) and unmarried couples ($N = 23$) and psychological rank scores. Psychological rank was also not related to gender ($r = -0.05$). Only the variables objective social status, occupation level, individual income, relationship status, and marital status accounted for a variance in psychological rank grater than 6%, which means that in this sample they were the strongest demographic predictors of psychological rank.

[5] See Appendix B

Table 1 in Appendix B summarizes the mean psychological rank scores and their standard deviations (SD) for various demographic variables. Figures B25[6] to B32 illustrate the above mentioned relationships between the participants' mean psychological rank scores and the various demographic categories.

Sense of Coherence

Sense of coherence scores were related to occupation level ($\underline{r} = 0.20$, $\underline{p} < 0.05$), but not to the composite measure of objective social status ($\underline{r} = 0.15$), education level ($\underline{r} = 0.06$), and individual income ($\underline{r} = 0.15$). They were further related to the respondents age ($\underline{r} = 0.17$, $\underline{p} < 0.05$), relationship status (if regrouped into two categories – one without spouse or partner and one with spouse or partner) ($\underline{r} = 0.28$, $\underline{p} < 0.01$), and to the frequency of doctor visit ($\underline{r} = 0.21$, $\underline{p} < 0.05$). Sense of coherence was also not related to gender ($\underline{r} = 0.02$). Only the variable relationship status accounted for a variance in SOC grater than 6%, which means that in this sample it was the strongest demographic predictor of SOC.

Table 1 in Appendix B summarizes the mean SOC scores and their standard deviations (SD) for various demographic variables. Figures B33[7] to B38 illustrate the above mentioned relationships between the participants' mean SOC scores and the various demographic categories.

[6] See Appendix B
[7] See Appendix B

Objective Social Status

Objective social status scores were related to occupation level ($r = 0.70$, $p < 0.01$), education level ($r = 0.72$, $p < 0.01$), and individual income ($r = 0.76$, $p < 0.01$). They were further related to the respondents relationship status (if regrouped into two categories – one without spouse or partner and one with spouse or partner) ($r = 0.17$, $p < 0.05$). The variable individual income contributed for 58% of the variance in objective social status, whereas the variable education level accounted only for 51%, and the variable occupation level only for 48% of the variance in objective social status. This means that in this sample income was the factor that most strongly influenced the index of objective social status. The composite measure of objective SES, occupation level, and individual income showed a significant association with subjective rank and psychological rank. Objective SES explained 6.1% of the variance in subjective rank and 6.2% of the variance in psychological rank. Individual income explained 8.7% of the variance in subjective rank and 7.5% of the variance in psychological rank. Objective SES and individual income were also weakly related to self-reported health. This illustrates that effective social rank measures, as reflected by one's income and occupation level, have in this sample a strong influence on perceived rank.

In this sample, age was associated with higher subjective and psychological rank and a higher sense of coherence. Increasing age seemed to contribute to a stronger sense of empowerment and meaning. Gender was strongly associated with externalized social rank with women perceiving that society attributes them a mean 0.8175 lower social rank than to men (4.8990 for men and 4.0815 for women; see Table 1, appendix B).

Interestingly, the women's own sense of social rank didn't differ from men's sense of social rank (5.7958 for men and 5.6101 for women; see Table 1, appendix B). This substantiates the significance of sexism and the fact that women perceive the systematic prejudice against them. On the other hand women in this sample seemed to possess an inner sense of strength that would compensate for the effect of perceived sexism.

On average internalized social rank was a mean 1.35 points higher than externalized social rank. This mean that all the participant of this survey experienced some outwardly projected oppression or marginalization.

The variable relationship status (if regrouped into two categories – one without spouse or partner and one with spouse or partner) was associated with self-reported health, subjective rank, psychological rank, and sense of coherence. It explained 9.1% of the variance in psychological rank and 8.1% of the variance in sense of coherence. This means that being in a significant relationship was associated with better health and more subjective rank, psychological rank, and a higher sense of coherence. Furthermore, being married was associated with an additional higher sense of subjective and social rank (it explained 16% of the variance in internalized social rank) but had no additional influence on SOC and objective social status.

Quantitative Analysis of Rank, Sense of Coherence, and Self-Rated Health Scores for Various Sexual Orientations

Table 4 shows the differences in rank, sense of coherence, and self-rated health scores for respondents with differing sexual orientations. There was no significant correlation between sexual orientation, rank, SOC, and self-rated health and the sample sizes weren't large enough to draw any conclusions. Nevertheless, some trends are interesting. The subgroup of heterosexuals with occasional homosexual experiences ($N = 21$) had the lowest mean subjective (4.72) and psychological (4.45) rank scores, as well as the lowest SOC (4.36) scores.

Independent samples t tests showed significant differences in mean subjective rank (4.72/5.33; $p = 0.016$), psychological rank (4.45/5.43; $p = 0.001$), and sense of coherence (4.36/5.21; $p = 0.001$) between this subgroup and the subgroup of participants that defined themselves as being exclusively heterosexuals ($N = 86$). The subgroup of homosexuals with occasional heterosexual experiences ($N = 4$) had the lowest externalized social rank (3.54) scores.

When I regrouped the respondents into two categories – one group of exclusively heterosexuals and one group including all the others – being exclusively identified as heterosexual was positively associated with subjective rank ($r = 0.19$, $p < 0.05$), psychological rank ($r = 0.20$, $p < 0.05$), an sense of coherence ($r = 0.21$, $p < 0.05$).

Table 4. Mean rank and sense of coherence scores for respondents with various sexual orientations.

Sexual orientation	Subjective rank *(SD)*	Psycho-logical rank *(SD)*	Sense of coherence *(SD)*	External-ized social rank *(SD)*	Internal-ized social rank *(SD)*	Self-rated health *(SD)*	N
Exclusively homo-sexual	5.2995 *(0.7682)*	5.4722 *(0.9456)*	5.5537 *(0.4193)*	4.2407 *(1.0479)*	5.7341 *(0.4429)*	3.4000 *(1.5033)*	9
Mostly homo-sexual with occasional hetero-sexual experiences	4.7955 *(0.6644)*	4.9792 *(1.0078)*	4.8481 *(0.8232)*	**3.5417 *(0.8319)***	5.2857 *(0.1166)*	3.1500 *(1.2477)*	4
Mostly homo-sexual with marked hetero-sexual experiences	5.5545 *(0.7178)*	5.9375 *(0.6396)*	5.3654 *(0.6538)*	4.1667 *(0.8819)*	5.7500 *(0.8196)*	4.9000 *(0.4163)*	4
Homo-sexual as well as hetero-sexual	5.2273 *(0.2571)*	5.2500 *(0.4714)*	4.6154 *(0.3264)*	3.8333 *(1.1785)*	5.9286 *(0.7071)*	3.0000 *(1.4142)*	2
Mostly hetero-sexual with marked homo-sexual experiences	5.2121 *(0.4842)*	5.5556 *(0.7182)*	5.1410 *(0.6905)*	3.9444 *(0.7503)*	5.5000 *(0.4309)*	3.8333 *(0.6377)*	6
Mostly hetero-sexual with occasional homo-sexual experiences	**4.7240 *(1.0002)***	**4.4524 *(1.1636)***	**4.3640 *(1.0123)***	4.5206 *(1.0382)*	5.4161 *(0.9623*	3.8190 *(1.1470)*	21
Exclusively hetero-sexual	5.3270 *(0.7804)*	5.4313 *(0.9187)*	5.2123 *(0.7582)*	4.2798 *(1.0438)*	5.7129 *(0.6964)*	4.1093 *(1.2130)*	86

Correlations Between Self-Rated Heath Scores, Rank, SOC, and Objective SES Scores

Table 5 presents the means and standard deviations of participants' computed health, rank, sense of coherence, and objective SES scores and table 6 shows the Pearson correlations between self reported health, subjective rank measures, SOC, and objective SES indicators. The highest positive associations were found for subjective rank ($\underline{r}$ = 0.56, $\underline{p} < 0.001$) and psychological rank ($\underline{r}$ = 0.55, $\underline{p} < 0.001$); subjective rank measures were all more strongly related to self-rated health than objective SES.

Table 5. Means and standard deviations for health, rank, sense of coherence, and objective SES scores

	Mean	Minimum	Maximum	Std. Deviation	N
Self-rated health	3.9835	1.25	6.60	1.2062	133
Subjective rank	5.2229	3.00	6.86	0.8240	133
Internalized social rank	5.6548	3.29	7.00	0.7167	133
Externalized social rank	4.2782	2.00	7.00	1.0225	133
Psychological rank	5.2946	2.42	7.00	1.0101	133
Sense of coherence	5.0865	2.46	6.62	0.8359	133
Objective social status	-3.87E-15	-7.38	2.76	2.0932	133

Table 6. Pearson correlations for health, rank, sense of coherence, and objective SES scores

		Subjective rank	Externalized social rank	Internalized social rank	Psychological rank	Sense of coherence	Objective social status
Pearson Correlation	**self-rated health**	0.558**	0.378**	0.296**	0.553**	0.348**	0.213*
Variances accounted for		***31%***	***14%***	***9%***	***31%***	***12%***	*4%*

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Self-Rated Health and Subjective Rank

A linear regression analysis was conducted to evaluate the prediction of the perceived health index from the overall subjective rank index for the subjects. The scatterplot for the two indices, as shown in figure 1, indicates that the two indices are linearly related such that as overall subjective rank increases the overall perception of health increases. The regression equation for predicting the overall perceived health index is:

Predicted Overall Perceived Health = -0.28[8] *+ 0.82*[9] *Overall Subjective Rank.*

As hypothesized, people with higher subjective rank tended to perceive their health as better. Accuracy in predicting the overall perceived health index was good. The correlation between the rank index and the health index was 0.56, $t(131) = 7.70$, $p < 0.001$. Approximately 31% of the variance of the health index was accounted for by its linear relationship with the rank index.

[8] This constant is called intercept. It describes the fact that a respondent who scores zero subjective rank is predicted to score -0.28 on the perceived health index.

[9] This number describes the regression coefficient or slope of the scatterplot. The slope of 0.82 indicates that each time a respondent's subjective rank score increases by 1 point, his or her predicted self-rated health score increases by approximately 0.8 point.

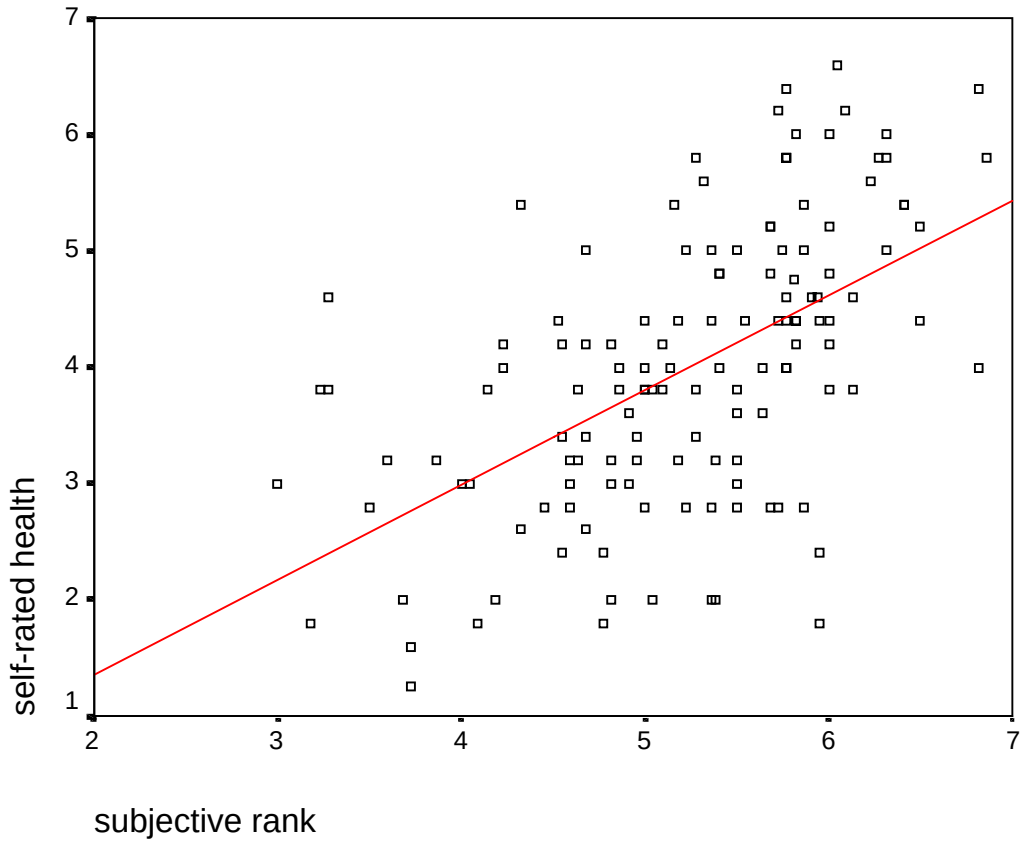

Figure 1. Relationship between self-rated health scores and subjective rank scores.

Further an independent samples t test was conducted to evaluate the hypothesis that respondents with an above average subjective rank (>= 5.22[10]) perceive their health as better as opposed to respondents with a below average subjective rank (medium split). The test was significant $t(131) = 6.36$, $p < 0.001$. Table 7 shows the mean subjective health values and standard deviations for both groups and Table 8 shows a summary of the results. Figure 2 shows the distribution of mean subjective health score for participants with above average subjective rank and for participants with a below average subjective rank.

[10] I used the average rank value to split the respondents into two contrasting groups that differ strongly in subjective rank.

Table 7. Self-reported health values for a group with high subjective rank and low subjective rank measures.

		N	Mean	Std. deviation	Std. error mean
Self-rated health	**Subjective rank**				
	high rank	74	4.5047	1.1500	0.1337
	low rank	59	3.3297	0.9301	0.1211
	Externalized social rank				
	high rank	66	4.3909	1.0855	0.1336
	low rank	67	3.5821	1.1915	0.1456
	Internalized social rank				
	high rank	73	4.2459	1.1836	0.1385
	low rank	60	3.6642	1.1647	0.1504
	Psychological rank				
	high rank	71	4.5345	1.1346	0.1347
	low rank	62	3.3524	0.9554	0.1213
	Sense of coherence				
	high SOC	71	4.3655	1.1281	0.1339
	low SOC	62	3.5460	1.1505	0.1463

Table 8. Independent-Samples T Test for high/low subjective rank and high/low SOC measures

	t (131)	p
Subjective rank	6.36	< 0.001
Externalized social rank	4.09	< 0.001
Internalized social rank	2.84	= 0.005
Psychological rank	6.45	< 0.001
SOC	4.14	< 0.001

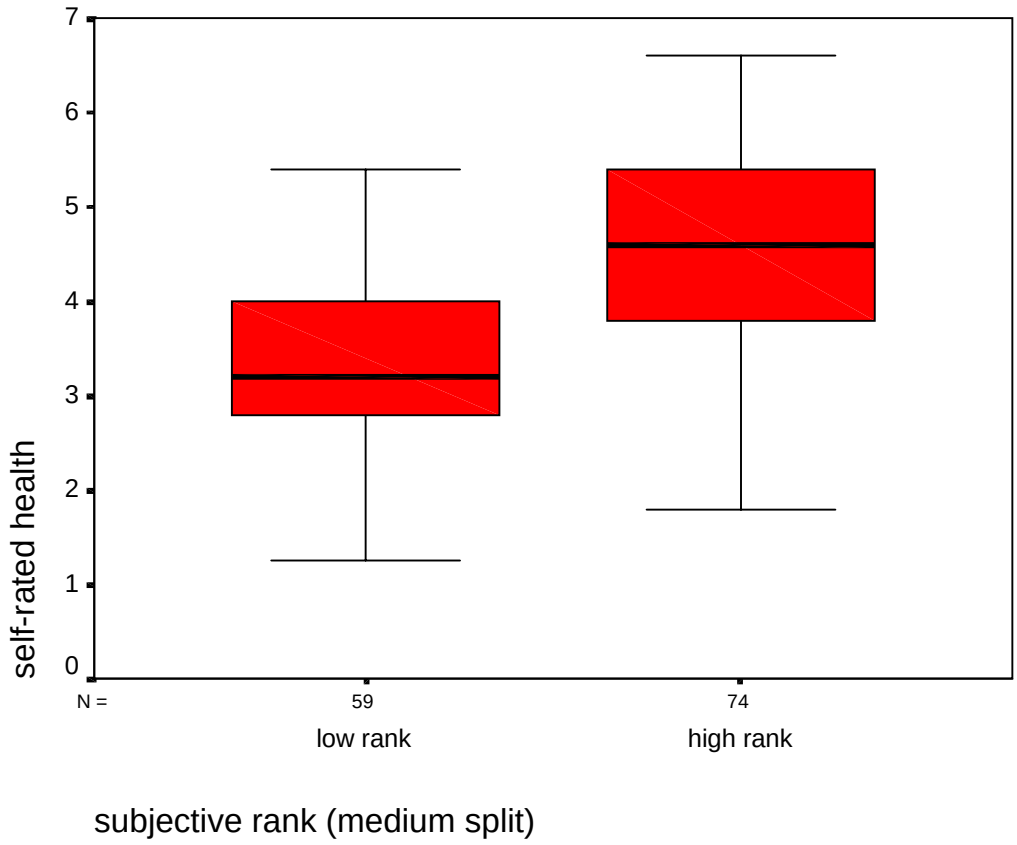

Figure 2. Distribution of self-rated health scores for participants with high or low subjective rank.

Self-Rated Health and Externalized Social Rank

A linear regression analysis was conducted to evaluate the prediction of the perceived health index from the externalized social rank index for the subjects. The scatterplot for the two variables, as shown in figure 3, indicates that the two variables are linearly related such that as externalized rank increases the overall perception of health increases. The regression equation for predicting the overall perceived health index is:

Predicted Overall Perceived Health = 2.08 + 0.45 Overall Externalized Social Rank.

As hypothesized, people with higher externalized social rank tended to perceive their health as better. Accuracy in predicting the overall perceived health index was moderate. The correlation between the rank index and the health index was 0.38, $t(131) = 4.67$, $p < 0.001$. Approximately 14% of the variance of the health index was accounted for by its linear relationship with the rank index.

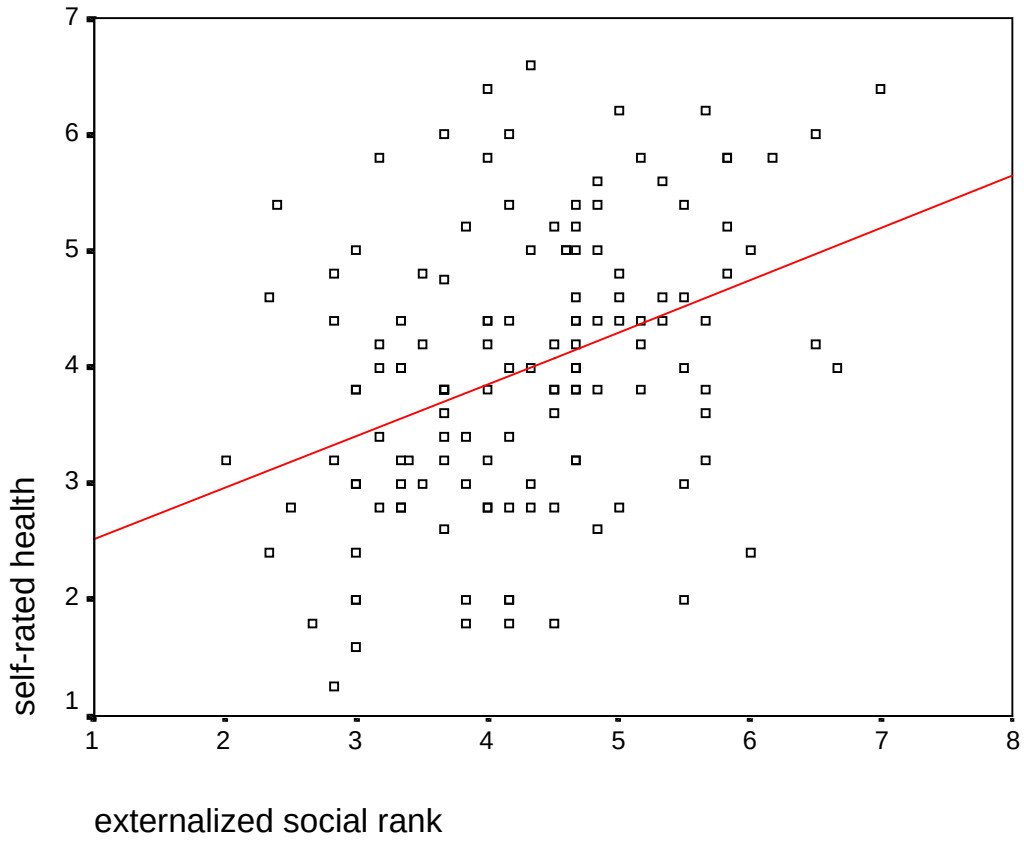

Figure 3. Relationship between self-rated health scores and externalized social rank scores.

Further an independent samples t test was conducted to evaluate the hypothesis that respondents with an above average externalized social rank (>= 4.28) perceive their health as better as opposed to respondents with a below average externalized social rank (medium split). The test was significant $t(131) = 4.09$, $p < 0.001$. Table 6 shows the mean

subjective health values and standard deviations for both groups. Figure 4 shows the distribution of mean subjective health score for participants with above average externalized social rank and for participants with a below average externalized social rank.

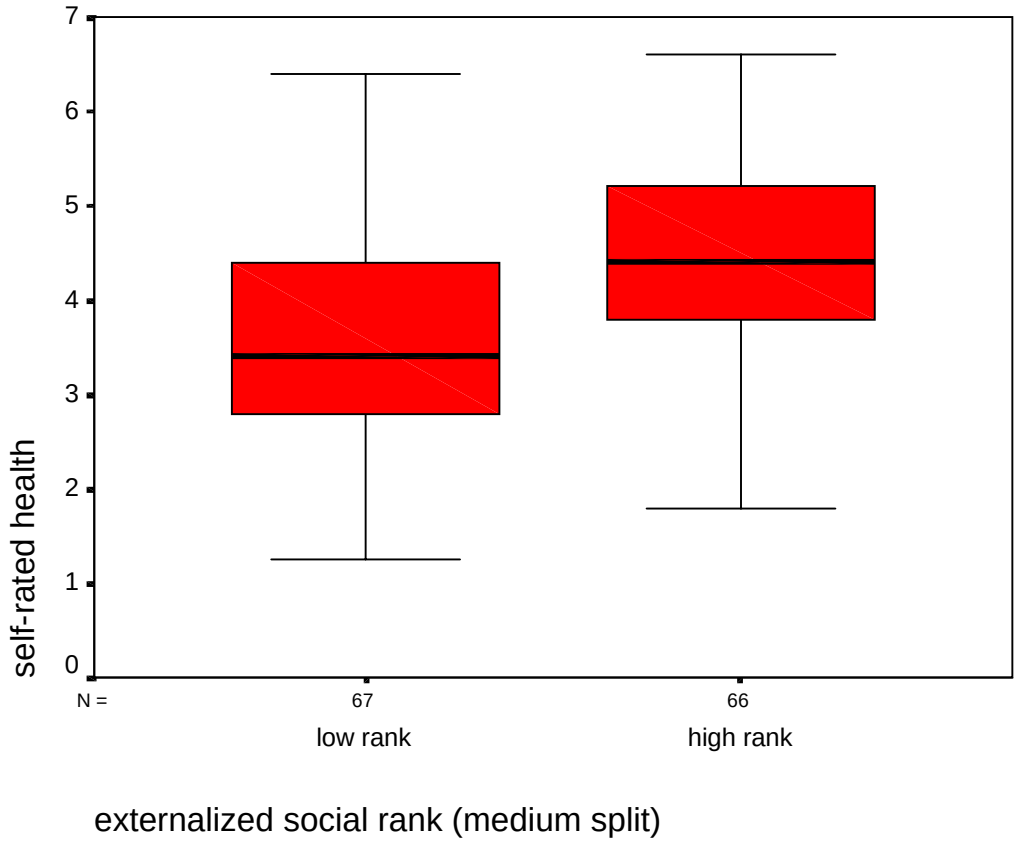

Figure 4. Distribution of self-rated health scores for participants with high or low externalized social rank.

Self-Rated Health and Internalized Social Rank

A linear regression analysis was conducted to evaluate the prediction of the perceived health index from the internalized social rank index for the subjects. The scatterplot for the two variables, as shown in figure 5, indicates that the two variables are linearly

related such that as internalized rank increases the overall perception of health increases. The regression equation for predicting the overall perceived health index is:

Predicted Overall Perceived Health = 1.16 + 0.50 Overall Internalized Social Rank.

As hypothesized, people with higher externalized social rank tended to perceive their health as better. Accuracy in predicting the overall perceived health index was moderate. The correlation between the rank index and the health index was 0.30, $t(131) = 3.55$, $p = 0.001$. Approximately 9% of the variance of the health index was accounted for by its linear relationship with the rank index.

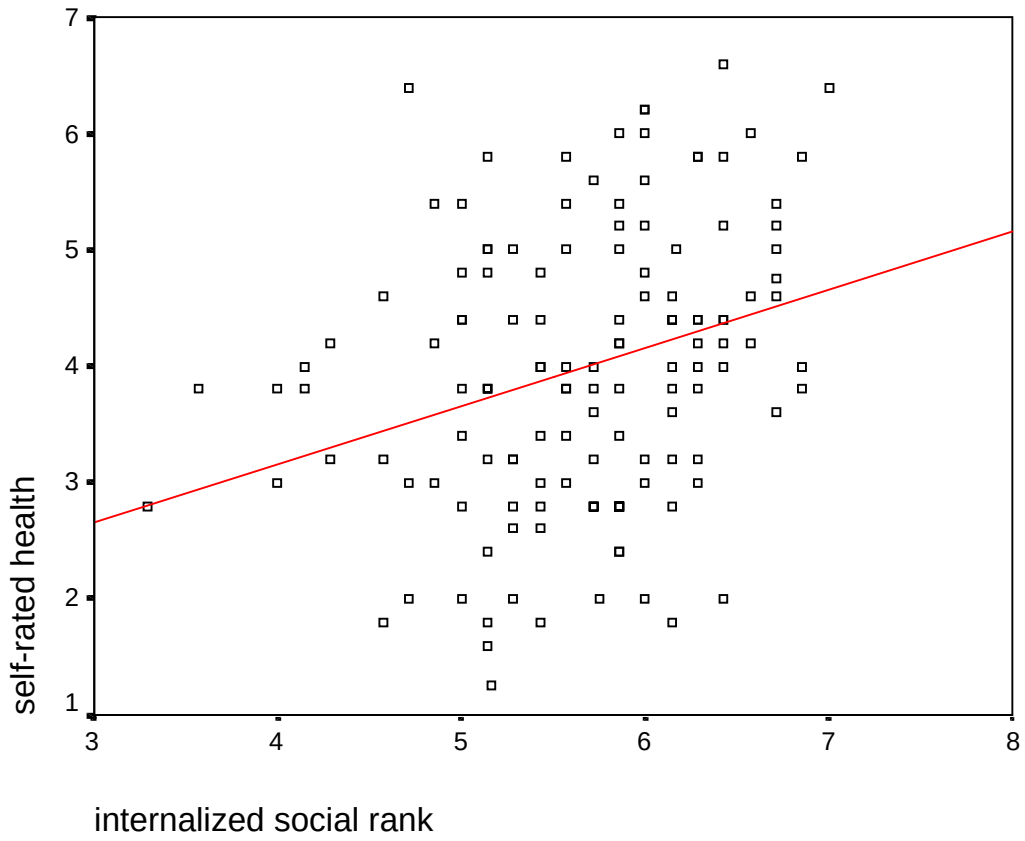

Figure 5. Relationship between self-rated health scores and internalized social rank scores.

Further an independent samples t test was conducted to evaluate the hypothesis that respondents with an above average internalized social rank (>= 5.65) perceive their health as better as opposed to respondents with a below average internalized social rank (medium split). The test was significant $t(131) = 2.84$, $p = 0.005$. Table 6 shows the mean subjective health values and standard deviations for both groups. Figure 6 shows the distribution of mean subjective health score for participants with above average internalized social rank and for participants with a below average internalized social rank.

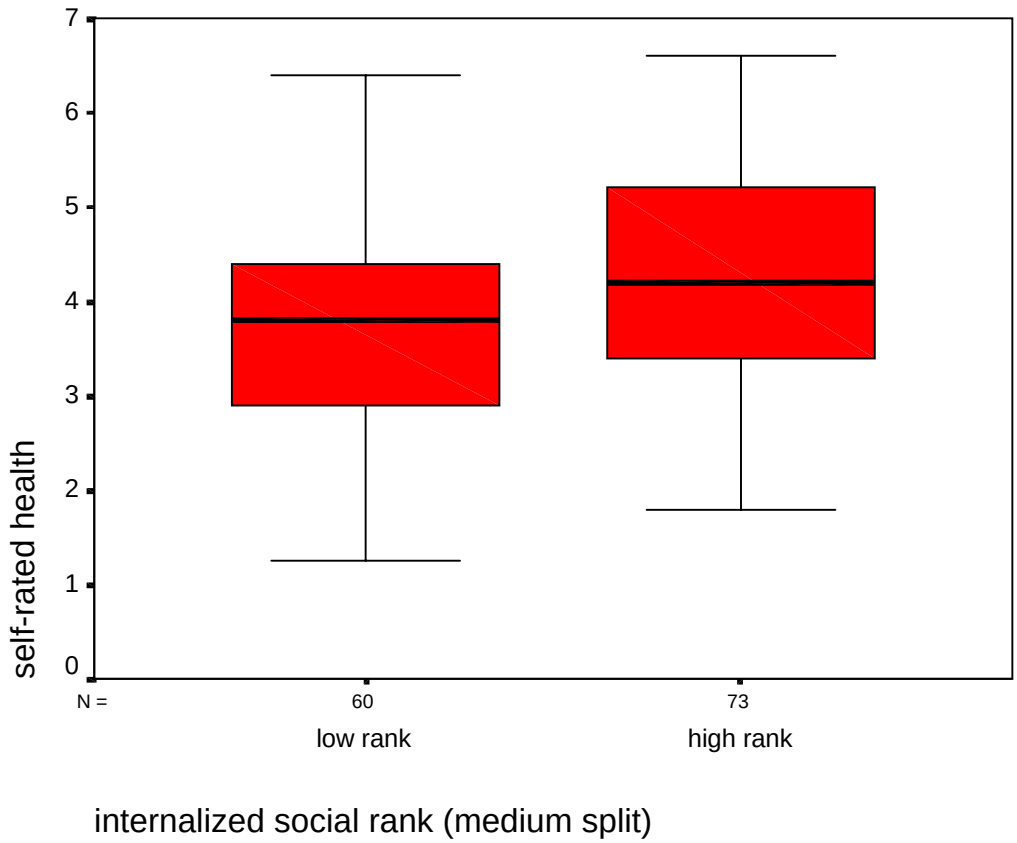

Figure 6. Distribution of self-rated health scores for participants with high or low internalized social rank.

Self-Rated Health and Psychological Rank

A linear regression analysis was conducted to evaluate the prediction of the perceived health index from the psychological rank index for the subjects. The scatterplot for the two variables, as shown in figure 7, indicates that the two variables are linearly related such that as psychological rank increases the overall perception of health increases. The regression equation for predicting the overall perceived health index is:

Predicted Overall Perceived Health = 0.48 + 0.66 Psychological Rank.

As hypothesized, people with higher subjective rank tended to perceive their health as better. Accuracy in predicting the overall perceived health index was moderate. The correlation between the rank index and the health index was 0.55, $t(131) = 7.60$, $p < 0.001$. Approximately 31% of the variance of the health index was accounted for by its linear relationship with the rank index.

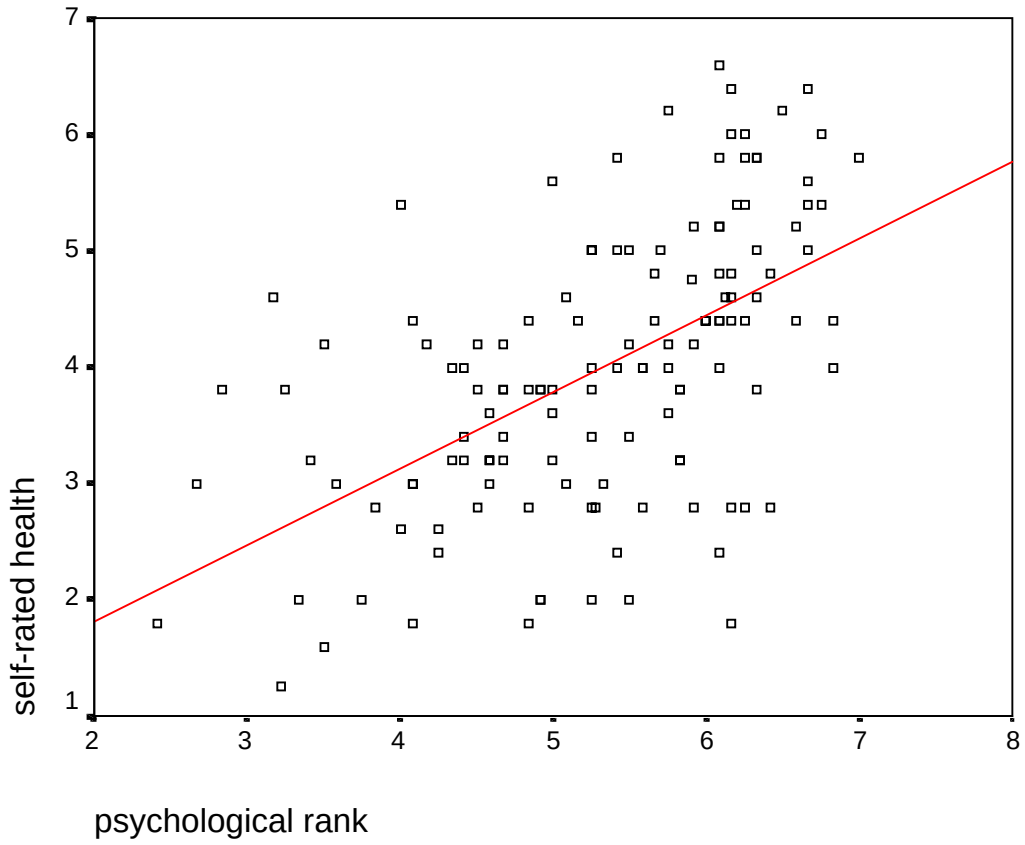

Figure 7. Relationship between self-rated health scores and psychological rank scores.

Further an independent samples t test was conducted to evaluate the hypothesis that respondents with an above average psychological rank (>= 5.29) perceive their health as better as opposed to respondents with a below average psychological rank (medium split). The test was significant $t(131) = 6.45$, $p < 0.001$. Table 6 shows the mean subjective health values and standard deviations for both groups. Figure 8 shows the distribution of mean subjective health score for participants with above average psychological rank and for participants with a below average psychological rank.

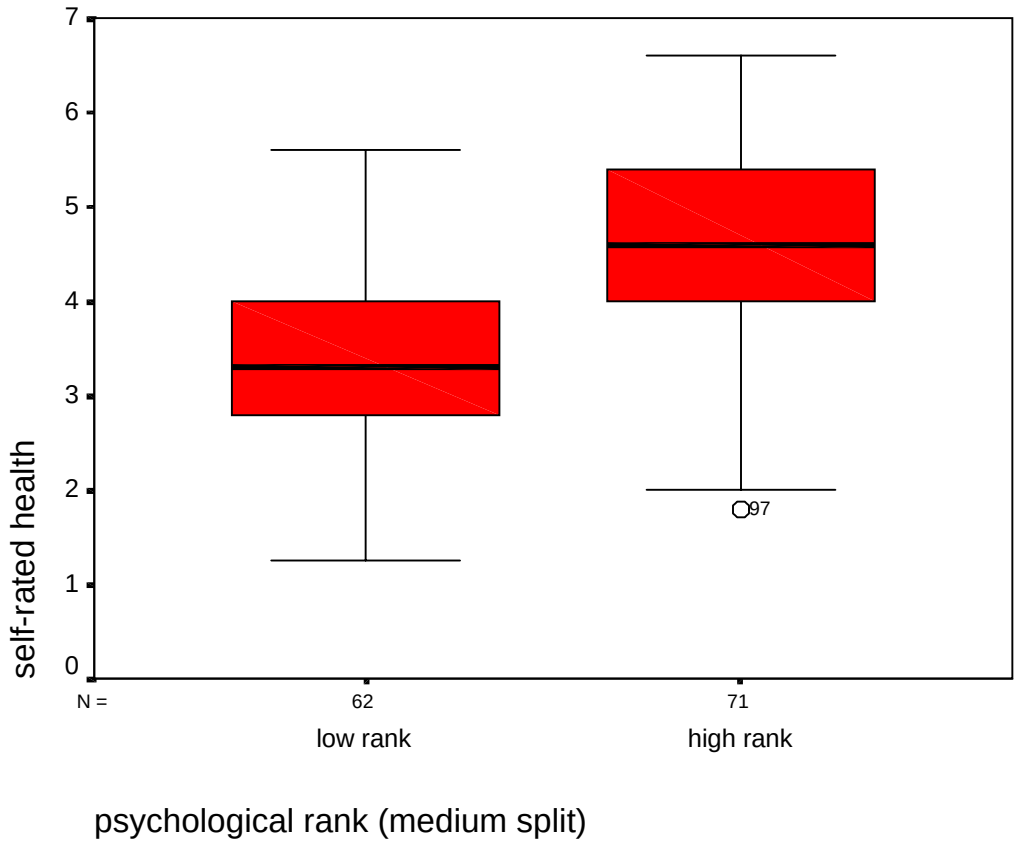

Figure 8. Distribution of self-rated health scores for participants with high or low psychological rank.

Self-Rated Health and Objective Social Status

A linear regression analysis was conducted to evaluate the prediction of the perceived health index from the objective social status index for the subjects. The scatterplot for the two variables, as shown in figure 9, indicates that the two variables are linearly related such that as objective social status increases the overall perception of health increases. The regression equation for predicting the overall perceived health index is:

Predicted Overall Perceived Health = 3.98 + 0.12 Overall Objective Social Status.

As hypothesized, people with higher objective social status tended to perceive their health as better. Accuracy in predicting the overall perceived health index was moderate. The correlation between the objective SES index and the health index was 0.21, $t(131) = 2.49$, $p = 0.014$. Approximately 4% of the variance of the health index was accounted for by its linear relationship with the objective social status index.

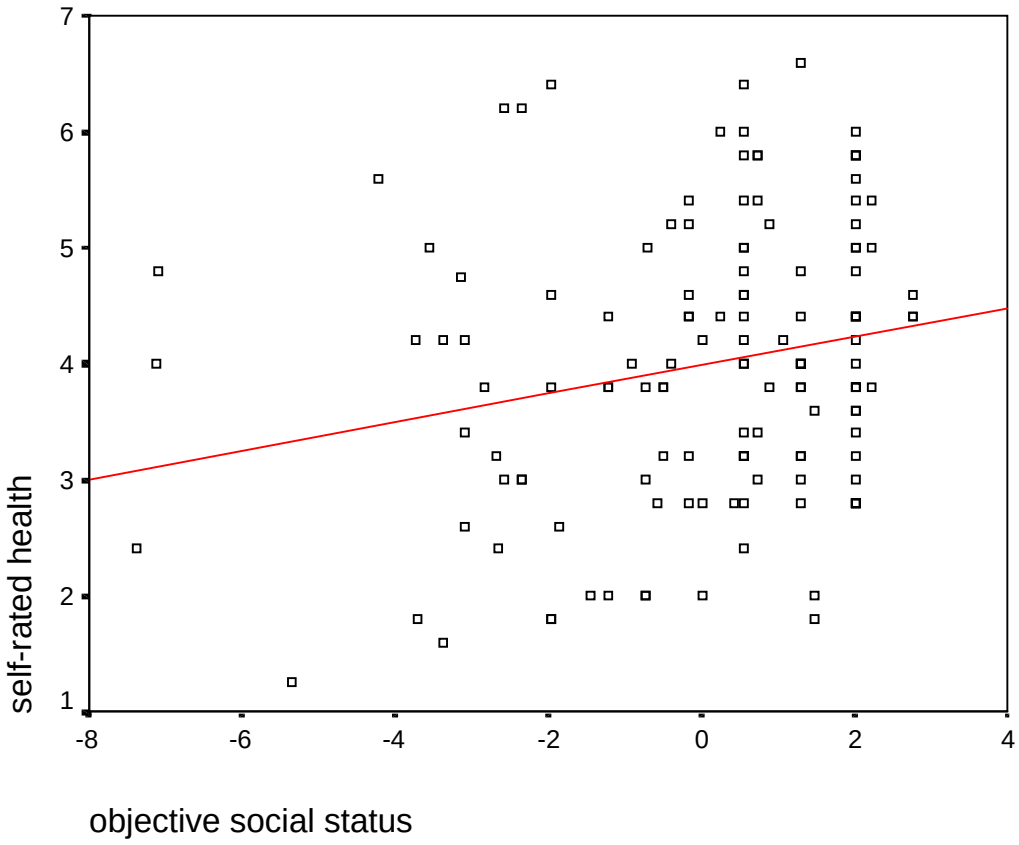

Figure 9. Relationship between self-rated health scores and objective social status scores.

A subsequent regression analysis for the individual variable income (which showed almost identical correlation as the composite index of objective social status) revealed

comparable results. The regression equation for predicting the overall perceived health index is:

Predicted Overall Perceived Health = 3.31 + 0.19 Overall Income.

The correlation between the income variable and the health index was 0.21, $t(129) = 2.48$, $p = 0.014$. Approximately 5% of the variance of the health index was accounted for by its linear relationship with the variable income.

Self-Rated Health and Sense of Coherence

A linear regression analysis was conducted to evaluate the prediction of the perceived health index from the sense of coherence index for the subjects. The scatterplot for the two variables, as shown in figure 10, indicates that the two variables are linearly related such that as sense of coherence increases the overall perception of health increases. The regression equation for predicting the overall perceived health index is:

Predicted Overall Perceived Health = 1.43 + 0.50 Overall Sense of Coherence.

As hypothesized, people with higher sense of coherence tended to perceive their health as better. Accuracy in predicting the overall perceived health index was moderate. The correlation between the rank index and the health index was 0.35, $t(131) = 4.25$, $p < 0.001$. Approximately 12% of the variance of the health index was accounted for by its linear relationship with the sense of coherence index.

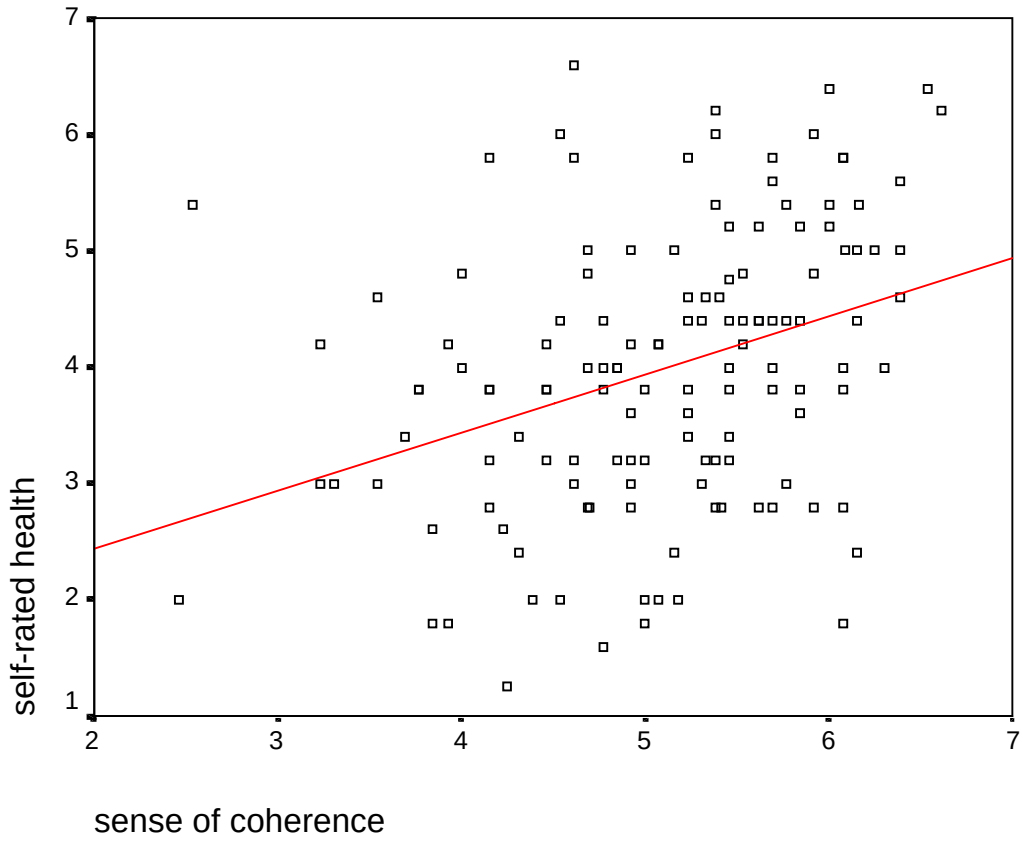

Figure 10. Relationship between self-rated health scores and sense of coherence scores.

Further an independent samples t test was conducted to evaluate the hypothesis that respondents with an above average sense of coherence (>= 5.09) perceive their health as better as opposed to respondents with a below average sense of coherence (medium split). The test was significant $t(131) = 4.14$ $p < 0.001$. Table 6 shows the mean subjective health values and standard deviations for both groups. Figure 11 shows the distribution of mean subjective health score for participants with above average sense of coherence and for participants with a below average sense of coherence.

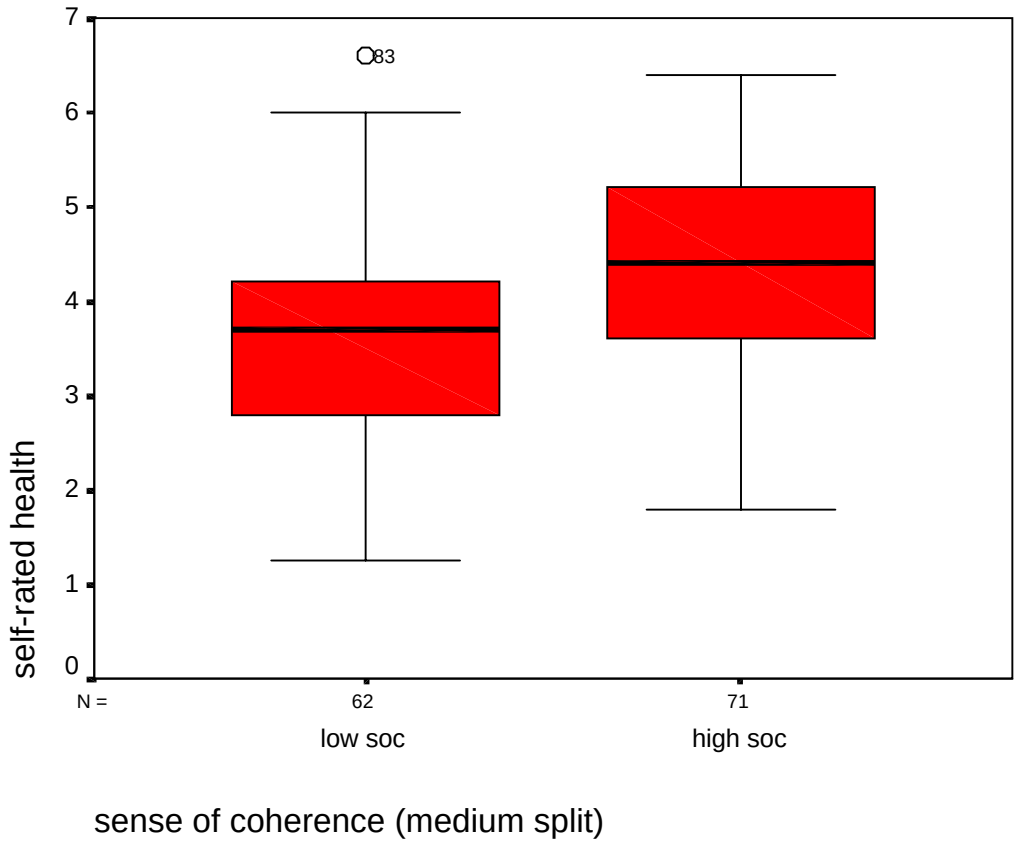

Figure 11. Distribution of self-rated health scores for participants with high or low sense of coherence.

Social Marginality

From the indexes of internalized social rank (subjective view of their position in regard to mainstream values in the areas of socio-cultural influences) and externalized social rank (subjective view of how others perceive their rank in the same areas of socio-cultural influences) I constructed an index of social marginality. The further the sum of the subtraction of the externalized measure from the internalized measure was to zero the more marginal (the more both perceptions differed) they were in the mentioned areas of socio-cultural influence.

A linear regression analysis was conducted to evaluate the prediction of the perceived health index from the marginality index. The scatterplot for the two variables, as shown in figure 12, indicates that the two variables are significantly linearly related such that as discrepancy increases the overall perception of health decreases. The regression equation for predicting the overall perceived health index is:

Predicted Overall Perceived Health = 4.41 - 0.31 Marginality.

People whose own perception of their social rank strongly differed from their externally projected perception tended to perceive their health as worse. The correlation between the marginality index and the health index was -0.21, $t(131) = -2.47$, $p = 0.015$ (< 0.05). Approximately 4% of the variance of the self-rated health index was accounted for by its linear relationship with the marginality index.

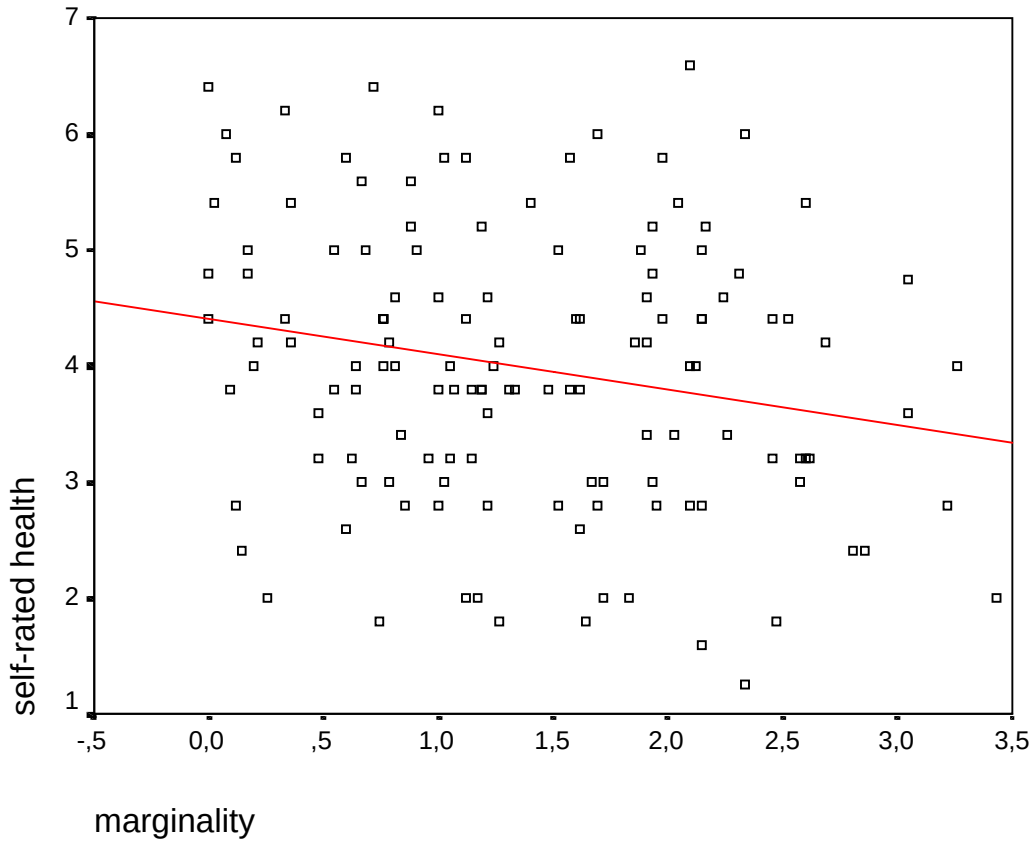

Figure 12. Relationship between self-rated health scores and marginality scores.

Multiple Regression Analyses

To see if objective SES or SOC helped in the prediction of self-rated health over and above the effect of subjective rank I conducted multiple regression analyses. The means and standard deviation for health perception, subjective rank, objective SES, and SOC are presented in Table 9.

Table 9. Descriptive statistics for self-rated health, subjective rank, objective SES, SOC, and marginality.

	Mean	Minimum	Maximum	Std. deviation	N
Self-rated health	3.9835	1.25	6.60	1.2062	133
Subjective rank	5.2229	3.00	6.86	0.8240	133
Objective SES	-3.86E-15	-7.38	2.76	2.0932	133
SOC	5.0865	2.46	6.62	0.8359	133
Externalized social rank	4.2782	2.00	7.00	1.0225	133
Marginality	1.3884	0.00	3.43	0.8290	133

Subjective Rank, Objective SES, and Self-Rated Health

The first analysis included subjective rank as predictor, while the second analysis included the objective SES index. The regression equation with the subjective rank measure was significant, $R^2 = 0.31$, F (1, 131) = 59.33, $p < 0.001$. The second regression equation with the objective SES index was significant $R^2 = 0.04$, F (1, 131) = 6.22, p = 0.014. Based on these results, the subjective rank measure appears to be a better predictor of the self-rated health index.

Next, a multiple regression analysis was conducted with both measures as predictors. The linear combination of both measures was significantly related to the self-rated health index, $R^2 = 0.32$, F (2, 130) = 30.26, $p < 0.001$. The subjective rank measure predicted significantly over and above the objective SES measure, R^2 change = 0.27, F (1, 130) = 51.88, $p < 0.001$, but the objective SES measure did not predict significantly over and above the subjective rank measure, R^2 change = 0.01, F (1, 130) = 1.13, p = 0.289. Based on these results, the objective SES measure appears to offer little additional predictive power beyond that contributed by a knowledge of subjective rank.

Subjective Rank, SOC, and Self-Rated Health

The next analysis included subjective rank and SOC as predictors. The regression equation with the subjective rank measure was significant, $R^2 = 0.31$, F (1, 131) = 59.33, $p < 0.001$. The regression equation with the SOC index was significant $R^2 = 0.12$, F (1, 131) = 18.04, $p < 0.001$. Based on these results, the subjective rank measure appears to be a better predictor of the self-rated health index.

Next, a multiple regression analysis was conducted with both measures as predictors. The linear combination of both measures was significantly related to the self-rated health index, $R^2 = 0.31$, F (2, 130) = 29.49, $p < 0.001$. The subjective rank measure predicted significantly over and above the SOC measure, R^2 change = 0.19, F (1, 130) = 36.11, $p < 0.001$, but the SOC measure did not predict significantly over and above the subjective rank measure, R^2 change = 0.00, F (1, 130) = 0.07, $p = 0.789$. Based on these results, the SOC measure appears to offer little additional predictive power beyond that contributed by a knowledge of subjective rank.

Externalized Social Rank, Marginality, and Self-Rated Health

The construct of marginality was strongly associated with the measure of externalized social rank ($r = -0.720$, $p < 0.001$) and explained 4.4% of the variance in self-reported health. To see if the index of marginality helped in the prediction of self-rated health over and above the effect of externalized social rank I conducted further multiple regression analyses. The means and standard deviation for health perception, externalized social rank, and marginality are presented in Table 9. The first analysis included externalized

social rank as predictor, while the second analysis included the marginality index. The regression equation with the social rank measure was significant, $R^2 = 0.14$, F (1, 131) = 28.81, $p < 0.001$. The second regression equation with the marginality index was significant $R^2 = 0.04$, F (1, 131) = 6.08, $p = 0.015$. Based on these results, the externalized social rank measure appears to be a better predictor of the self-rated health index.

Next, a multiple regression analysis was conducted with both measures as predictors. The linear combination of both measures was significantly related to the self-rated health index, $R^2 = 0.15$, F (2, 130) = 11.52, $p < 0.001$. The externalized social rank measure predicted significantly over and above the marginality measure, R^2 change = 0.11, F (1, 130) = 16.26, $p < 0.001$, but the marginality measure did not predict significantly over and above the externalized social rank measure, R^2 change = 0.01, F (1, 130) = 1.20, $p = 0.275$. Based on these results, the marginality measure appears to offer little additional predictive power beyond that contributed by a knowledge of externalized social rank.

Correlations Between Independent and Interdependent Self Concepts and Self-Rated Health, Rank, SOC, and Objective SES Scores

Table 10 shows the Pearson correlations between self concepts, self reported health, subjective rank measures, SOC, and objective SES indicators. Positive correlations were found for an interdependent self concept and subjective rank ($r = 0.23$, $p < 0.01$), psychological rank ($r = 0.17$, $p < 0.05$), externalized social rank ($r = 0.20$, $p < 0.05$), and internalized social rank ($r = 0.25$, $p < 0.01$). It explained 5.3% of the variance in subjective rank, 4.1% of the variance in externalized social rank, and 6.2% of the

variance in internalized social rank. No significant correlations were found for the index of independent self. I conclude that integrative values seem to have a positive influence on individuals' perceived rank, whereas values of independence and personal achievements don't contribute to a stronger subjective rank.

Table 10. Pearson correlations for self concepts, health, rank, sense of coherence, and objective SES scores

		Self-rated health	Subjective rank	Externalized social rank	Internalized social rank	Psychological rank	SOC	Objective SES
Pearson Correlation	**Independent self**	-0.044	-0.085	-0.053	-0.005	-0.107	-0.067	0.121
	Interdependent self	-0.005	0.231**	0.203*	0.249**	0.171*	-0.058	0.038
Variances accounted for			*5.3%*	*4.1%*	*6.2%*	*2.9%*		

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Swiss Mail-Survey

Descriptive Statistics

The sample consisted of 59 participants, approximately 68% of whom were women (N = 40), while the rest were men (N = 19). The mean age of respondents was 45 (SD = 8.4. Of the participants 97 % were White Middle-European with one Eastern-European participant. The respondents' relationship status was: 15% single, 34% unmarried couple, 36% married, and 12% separated or divorced. As suspected, the sample represented a highly educated group of people. Of the participants 70% held a graduate or professional degree. Further, 24% characterized themselves as higher grade professionals, 40% as

professional of average qualification, and 27% as skilled manual or non-manual worker. The income level was more varied with 14% earning between less than sFr.15'000, 19% between sFr.15’001-30’000, 36% between sFr.30'001-50'000, 17% between sFr.50'001-80'000, and 12% between sFr.80’001-150’000. From the respondents 37% reported being self-employed, 40% were either full-time or part-time employed for wages or salary, and 21% reported being either unemployed (2%), unable to work (3.4%), homemaker (8.5%), or retired (1.7%). The majority (63%) of the sample described their sexual orientation as exclusively heterosexual, 29% as mostly heterosexual with occasional homosexual experiences, and 8.5% as exclusively homosexual.

Table 11 presents the means and standard deviations of participants’ computed health, rank, sense of coherence, and objective SES scores and Table 12 shows the Pearson correlations between self reported health, subjective rank measures, SOC, and objective SES indicators.

Table 11. Means and standard deviations for health, rank, sense of coherence, and objective SES scores

	Mean	Minimum	Maximum	Std. Deviation	N
Self-rated health	3.8390	1.00	6.20	1.1641	59
Subjective rank	4.9260	3.00	6.42	0.6501	59
Internalized social rank	5.0960	2.83	7.00	0.9244	59
Externalized social rank	4.7168	2.00	6.63	0.8713	59
Psychological rank	4.9437	2.50	6.50	0.8891	59
Sense of coherence	5.0438	2.85	6.62	0.7363	59
Objective social status	-0.1148	-3.32	3.31	1.4442	59

The highest correlations were found for psychological rank ($\underline{r} = 0.48$, $\underline{p} < 0.001$) and subjective rank ($\underline{r} = 0.39$, $\underline{p} = 0.001$); in contrast with the U.S. sample subjective social rank measures were not significantly related to self reported health. Contrarily to the U.S. sample the Swiss participants didn't much differ in their internal and external appreciation of their social rank. Further objective SES revealed a stronger correlation with self reported health ($\underline{r} = 0.39$, $\underline{p} = 0.001$) than found in the U.S. sample.

Table 12. Pearson correlations for health, rank, sense of coherence, and objective SES scores

		Subjective rank	**Externali-zed social rank**	**Internali-zed social rank**	**Psycho-logical rank**	**Sense of coherence**	**Objective social status**
Pearson Cor-relation	**self-rated health** (N 59)	0.390**	0.176	0.104	0.476**	0.382**	0.391**
Variances accounted for		***15.2***	*3.1*	*1.1*	***22.7***	***14.6***	***15.3***

**. Correlation is significant at the 0.01 level (2-tailed)

Subjective Rank, Objective SES, and Self-Rated Health

To see if objective SES helped in the prediction of self-rated health over and above the effect of subjective rank I conducted a multiple regression analyses. The first analysis included subjective rank as predictor, while the second analysis included the objective SES index. The regression equation with the subjective rank measure was significant, $\underline{R}^2 = 0.15$, $\underline{F}\ (1, 57) = 10.25$, $\underline{p} = 0.002$. The second regression equation with the objective SES index was significant $\underline{R}^2 = 0.15$, $\underline{F}\ (1, 57) = 10.31$, $\underline{p} = 0.002$. Based on these results subjective rank and objective SES appear to be equally predictive of self-rated health.

Next, a multiple regression analysis was conducted with both measures as predictors. The linear combination of both measures (subjective rank and objective SES) was significantly related to the self-rated health index, $R^2 = 0.25$, F (2, 56) = 9.295, $p < 0.001$. The subjective rank measure predicted significantly over and above the objective SES measure, R^2 change = 0.10, F (1, 56) = 7.16, $p = 0.010$. The objective SES measure predicted significantly over and above the subjective rank measure as well, R^2 change = 0.10, F (1, 56) = 7.22, $p = 0.009$. Based on these results both measures appear to offer additional predictive power beyond that contributed by a knowledge of only one of the measures.

Subjective Rank, SOC, and Self-Rated Health

The next analysis included subjective rank and SOC as predictors. The SOC measure did not predict self-rated health significantly over and above the subjective rank measure, R^2 change = 0.03, F (1, 56) = 2.19, $p = 0.144$. Nor did the subjective rank measure predict significantly over and above the SOC measure, R^2 change = 0.04, F (1, 56) = 2.62, $p = 0.111$.

There are no obvious reasons why objective SES measures were more relevant in this Swiss sample. I might speculate that the Swiss socio-political context with less social disparities is reflected in a minor sense and awareness of marginality. The broader distribution of socio-economic status variables (especially income) might explain the greater effect of the index of objective social status.