```
title 'Cyberloafing, Mike Sage'; run;     ODS GRAPHICS ON;
proc univariate plot data=Sage; var Cyberloafing Conscientiousness Age;
 Histogram / normal;     PPPLot / normal; run;
```

The UNIVARIATE Procedure
Variable: Cyberloafing (Cyberloafing)

| **Moments** | | | |
|---|---|---|---|
| **Skewness** | 0.008039 | **Kurtosis** | -0.6908018 |

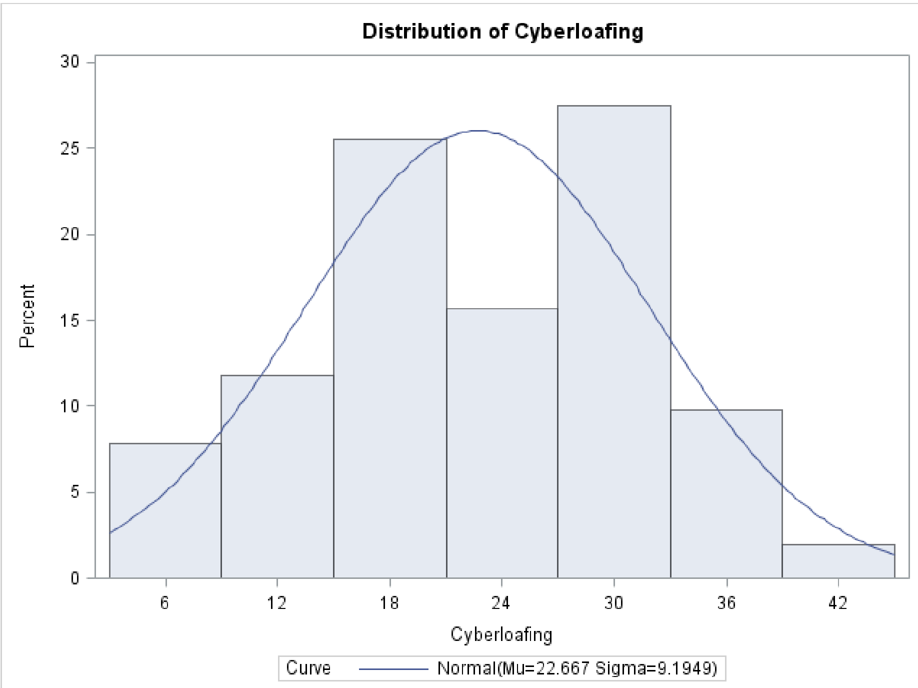
| **Basic Statistical Measures** | | | |
|---|---|---|---|
| **Location** | | **Variability** | |
| **Mean** | 22.66667 | **Std Deviation** | 9.19493 |
| **Median** | 23.00000 | **Variance** | 84.54667 |

| **Extreme Observations** | | | |
|---|---|---|---|
| **Lowest** | | **Highest** | |
| **Value** | **Obs** | **Value** | **Obs** |
| 4 | 37 | 35 | 25 |
| 6 | 38 | 37 | 5 |
| 7 | 29 | 37 | 14 |
| 8 | 50 | 38 | 19 |
| 11 | 49 | 43 | 3 |

```
     Stem Leaf                     #             Boxplot
       42 0                        1                |
       40                                           |
       38 0                        1                |
       36 00                       2                |
       34 00                       2                |
       32 0000                     4                |
       30 000                      3             +-----+
       28 00000                    5             |     |
       26 000                      3             |     |
       24 000                      3             |     |
       22 000                      3             *--+--*
       20 000                      3             |     |
       18 000                      3             |     |
       16 0000000                  7             +-----+
       14 000                      3                |
       12 00                       2                |
       10 00                       2                |
        8 0                        1                |
        6 00                       2                |
        4 0                        1                |
          ----+----+----+----+
```

I have not provided all of the output here but rather the most important parts. The plot option caused SAS to produce the above stem and leaf plot and boxplot, using old-fashioned methods that were designed for output to be used on a line printer. SAS also produced a normal probability plot in the old fashioned style, but I have not included it in this document. The stem and leaf plot and the boxplot indicate that the data are approximately normally distributed.

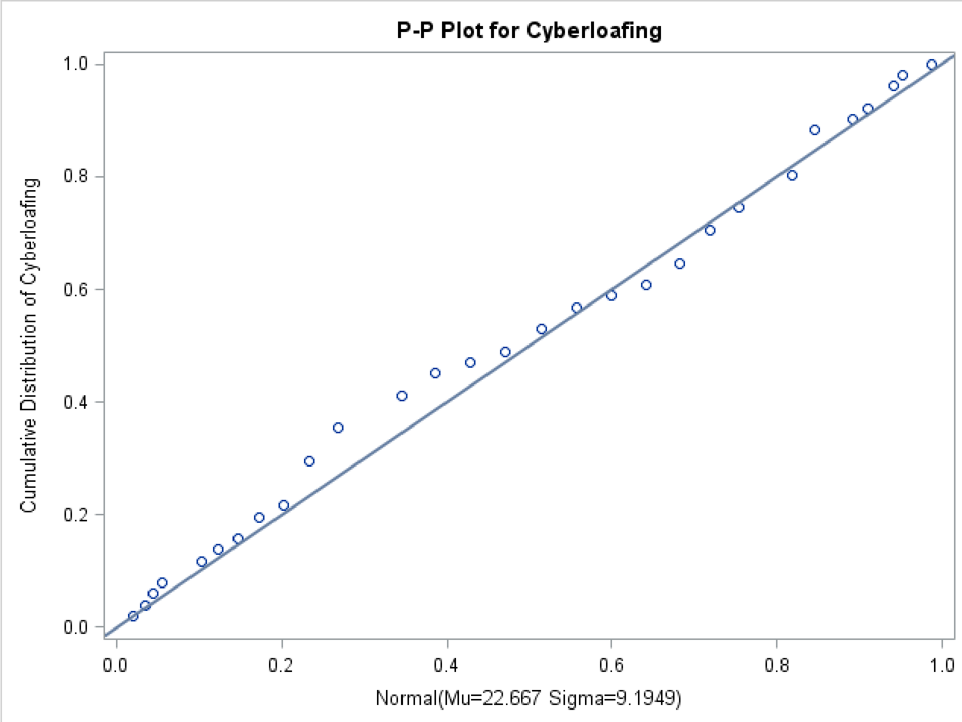
"Histogram / normal" produced a graphic showing a histogram of the observed scores with a overlaid curve of a normal distribution with the same mean and standard deviation as the observed scores. The scores in our sample appear to be close to being normally distributed.




| Goodness-of-Fit Tests for Normal Distribution | | | | |
|---|---|---|---|---|
| **Test** | **Statistic** | | **p Value** | |
| **Kolmogorov-Smirnov** | **D** | 0.08408694 | **Pr > D** | >0.150 |
| **Cramer-von Mises** | **W-Sq** | 0.05210904 | **Pr > W-Sq** | >0.250 |
| **Anderson-Darling** | **A-Sq** | 0.29443338 | **Pr > A-Sq** | >0.250 |

"PPPLot / normal;" caused SAS to produce table above and the graphical normal probability plot below. The table includes the results of three tests of the null hypothesis that the data came from a population that is normally distributed. I do not endorse the use of these tests for determining whether or not a normality assumption has been violated. With large sample sizes these tests will have so much power that they will produce "significant" results even when the deviation from normality is too small about which to worry, especially given that with large sample sizes correlation and regression analyses are more robust to violations of the normality assumption. With small samples sizes robustness is less and the goodness-of-fit tests may have too little power to detect a deviation from normality that is large enough to be a problem.

In the plot below, if the data are normally distributed then the line of dots will not deviate much from the solid reference line. Again, the plot indicates that the data are close to normally distributed.

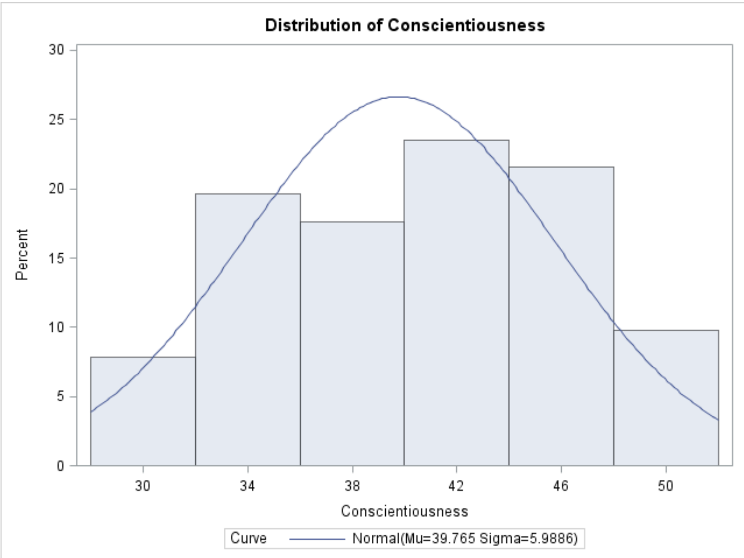


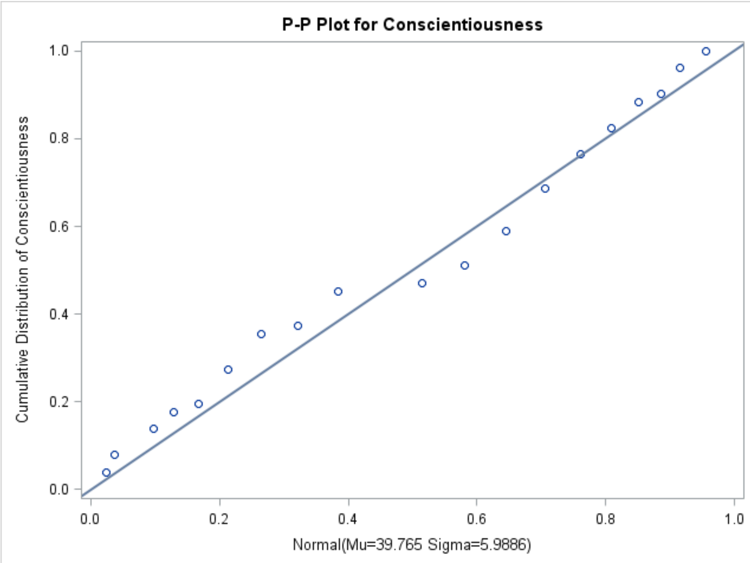

Cyberloafing, Mike Sage

The UNIVARIATE Procedure
Variable: Conscientiousness (Conscientiousness)

| Moments | | | |
|---|---|---|---|
| **Skewness** | -0.2692084 | **Kurtosis** | -0.8823586 |

| Basic Statistical Measures | | | |
|---|---|---|---|
| **Location** | | **Variability** | |
| **Mean** | 39.76471 | **Std Deviation** | 5.98862 |
| **Median** | 41.00000 | **Variance** | 35.86353 |






The conscientiousness scores are close to normal in their distribution.

---

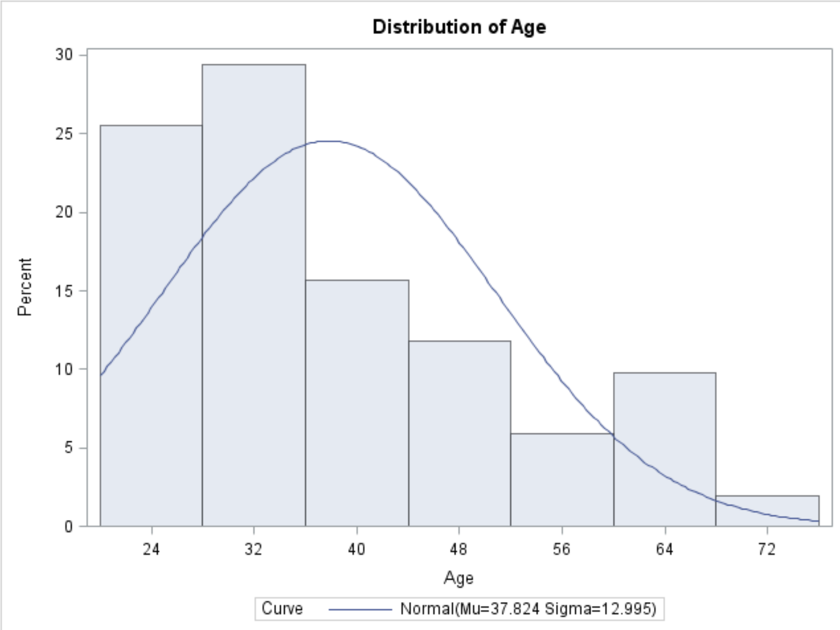
Cyberloafing, Mike Sage

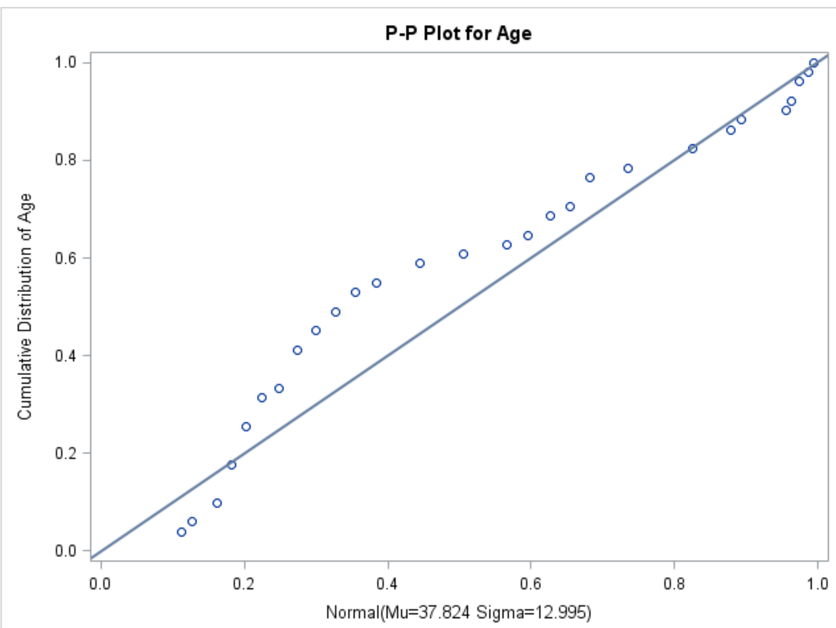
The UNIVARIATE Procedure
Variable: Age (Age)

| Moments | | | |
|---|---|---|---|
| **Skewness** | 0.94090779 | **Kurtosis** | -0.0914493 |

| Basic Statistical Measures | | | |
|---|---|---|---|
| **Location** | | **Variability** | |
| **Mean** | 37.82353 | **Std Deviation** | 12.99493 |
| **Median** | 33.00000 | **Variance** | 168.86824 |

| Extreme Observations | | | |
|---|---|---|---|
| **Lowest** | | **Highest** | |
| **Value** | **Obs** | **Value** | **Obs** |
| 22 | 5 | 61 | 51 |
| 22 | 3 | 63 | 2 |
| 23 | 27 | 63 | 39 |
| 25 | 37 | 67 | 46 |
| 25 | 4 | 71 | 38 |




The plots for age reveal a distinct positive skewness. When the absolute value of skewness ($g_1$) exceeds one, I usually am concerned enough to try transforming the variable to reduce the skewness. Transformations commonly used for that purpose include logarithmic, square roots, negative inverses, and ranks. The table below shows that a log transformation does a good job at reducing the skewness in age.

```
data transform; set Sage;
 SR_Age = SQRT(Age);  Log_Age = Log10(Age);
 Proc Means skewness kurtosis; Var Age SR_Age Log_Age; run;
```

| Variable | Label | Skewness | Kurtosis |
|---|---|---|---|
| **Age** | **Age** | 0.9409078 | -0.0914493 |
| **SR_Age** | | 0.7178151 | -0.5312523 |
| **Log_Age** | | 0.4972690 | -0.8392886 |

```
PROC CORR data=Sage; var Cyberloafing Conscientiousness Age;
run; quit;
```

The CORR Procedure

**3 Variables:** Cyberloafing Conscientiousness Age

**Simple Statistics**

| Variable | N | Mean | Std Dev | Sum | Minimum | Maximum | Label |
|---|---|---|---|---|---|---|---|
| **Cyberloafing** | 51 | 22.66667 | 9.19493 | 1156 | 4.00000 | 43.00000 | Cyberloafing |
| **Conscientiousness** | 51 | 39.76471 | 5.98862 | 2028 | 28.00000 | 50.00000 | Conscientiousness |
| **Age** | 51 | 37.82353 | 12.99493 | 1929 | 22.00000 | 71.00000 | Age |

**Pearson Correlation Coefficients, N = 51**
**Prob > |r| under H0: Rho=0**

| | Cyberloafing | Conscientiousness | Age |
|---|---|---|---|
| **Cyberloafing** | 1.00000 | -0.56297 | -0.46197 |
| Cyberloafing | | <.0001 | 0.0006 |
| **Conscientiousness** | -0.56297 | 1.00000 | 0.14286 |
| Conscientiousness | <.0001 | | 0.3173 |
| **Age** | -0.46197 | 0.14286 | 1.00000 |
| Age | 0.0006 | 0.3173 | |

Using Cohen's guidelines, the correlations between cyberloafing and both conscientiousness and age are large. Those guidelines are .1 = small, .3 = medium, and .5 = large.

*SAS does not give you the value of *t* here. The value is $t = \frac{.56297\sqrt{49}}{\sqrt{1-.56297^2}} = 4.77$.

I used the calculator at Vassar to get the confidence interval.


0.95 and 0.99 Confidence Intervals of rho

| | Lower Limit | Upper Limit |
|---|---|---|
| 0.95 | -0.725 | -0.341 |
| 0.99 | -0.765 | -0.26 |

PROC REG data=Sage; A: model Cyberloafing = Conscientiousness;
B: model Cyberloafing = Conscientiousness age / scorr2 pcorr2 stb vif; **run**; **quit**;

Here is a bivariate regression, predicting cyberloafing from Conscientiousness.

The REG Procedure
Model: A
Dependent Variable: Cyberloafing Cyberloafing

| | |
|---|---|
| **Number of Observations Read** | 51 |
| **Number of Observations Used** | 51 |

**Analysis of Variance**

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| **Model** | 1 | 1339.80121 | 1339.80121 | 22.74 | <.0001 |
| **Error** | 49 | 2887.53213 | 58.92923 | | |
| **Corrected Total** | 50 | 4227.33333 | | | |

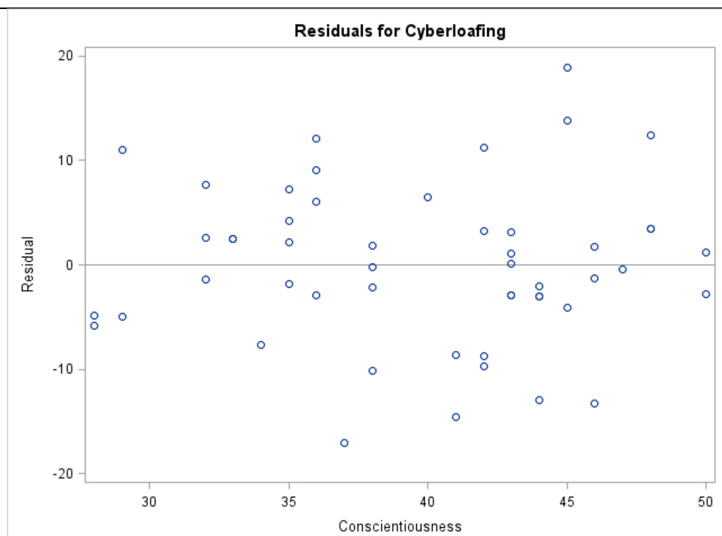
| | | | |
|---|---|---|---|
| **Root MSE** | 7.67654 | **R-Square** | 0.3169 |
| **Dependent Mean** | 22.66667 | **Adj R-Sq** | 0.3030 |
| **Coeff Var** | 33.86708 | | |

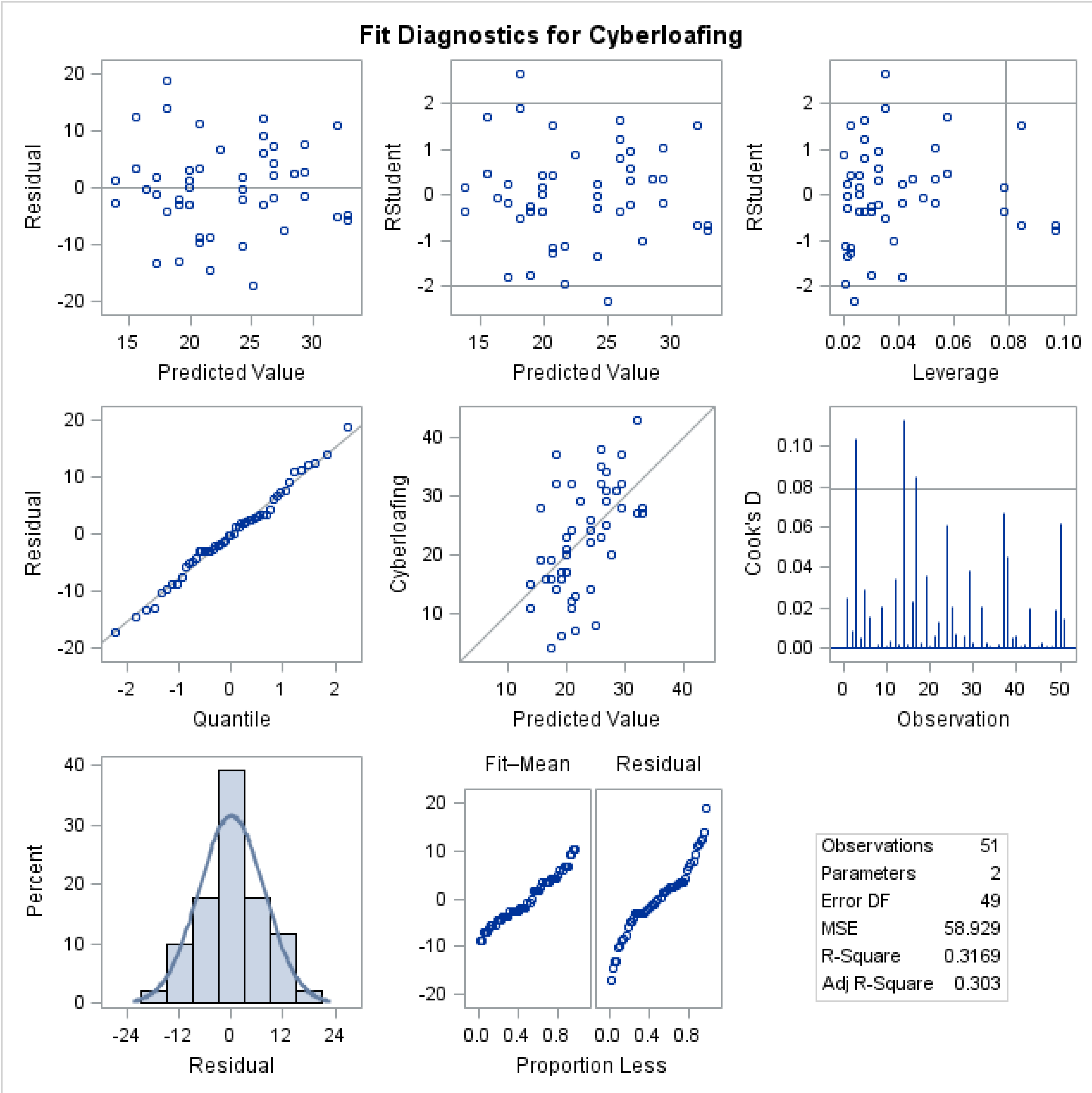
**Parameter Estimates**

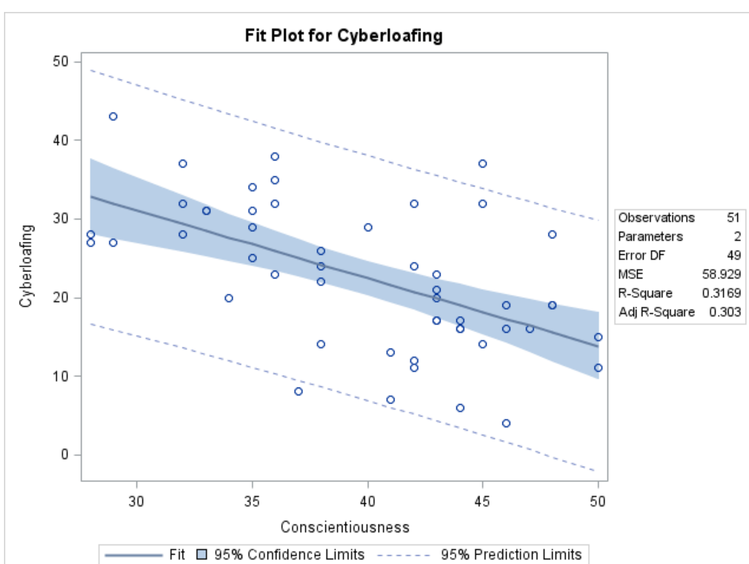
| Variable | Label | DF | Parameter Estimate | Standard Error | t Value | Pr > \|t\| |
|---|---|---|---|---|---|---|
| **Intercept** | Intercept | **1** | 57.03880 | 7.28832 | 7.83 | <.0001 |
| **Conscientiousness** | Conscientiousness | **1** | -0.86439 | 0.18128 | -4.77 | <.0001 |

Notice that the *t* reported here is that I computed above, by hand, and the *F* is the square of that *t*.

When using *t* or *F* with a regression analysis, we assume that the residuals (score minus predicted score) are normally distributed at every value of predicted score and that the variance in the residuals is constant across levels of the predicted score. The plots to the right and below help you evaluate those assumptions as well as identify outliers that may be having great influence on the solution.




Fit Diagnostics for Cyberloafing
Residual
Predicted Value
RStudent
Leverage
Quantile
Cyberloafing
Cook's D
Observation
Percent
Fit–Mean
Proportion Less
Observations 51
Parameters 2
Error DF 49
MSE 58.929
R-Square 0.3169
Adj R-Square 0.303


Fit Plot for Cyberloafing
Cyberloafing
Conscientiousness
Observations 51
Parameters 2
Error DF 49
MSE 58.929
R-Square 0.3169
Adj R-Square 0.303
Fit
95% Confidence Limits
95% Prediction Limits

The fit plot shows the bivariate scores, the regression line, and the confidence limits. If the relationship were nonlinear, that would be evident here.

B: model Cyberloafing = Conscientiousness age / scorr2 pcorr2 stb vif; **run**; **quit**;

**Now we add a second predictor, age.**

**Analysis of Variance**

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| **Model** | 2 | 1968.02919 | 984.01459 | 20.91 | <.0001 |
| **Error** | 48 | 2259.30414 | 47.06884 | | |
| **Corrected Total** | 50 | 4227.33333 | | | |

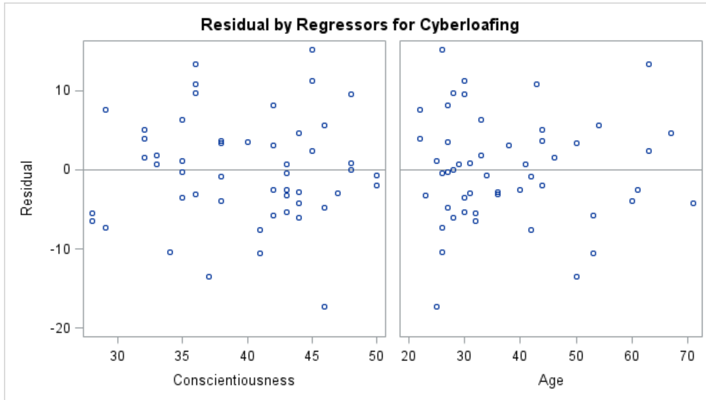
| | | | |
|---|---|---|---|
| **Root MSE** | 6.86067 | **R-Square** | 0.4655 |
| **Dependent Mean** | 22.66667 | **Adj R-Sq** | 0.4433 |
| **Coeff Var** | 30.26768 | | |

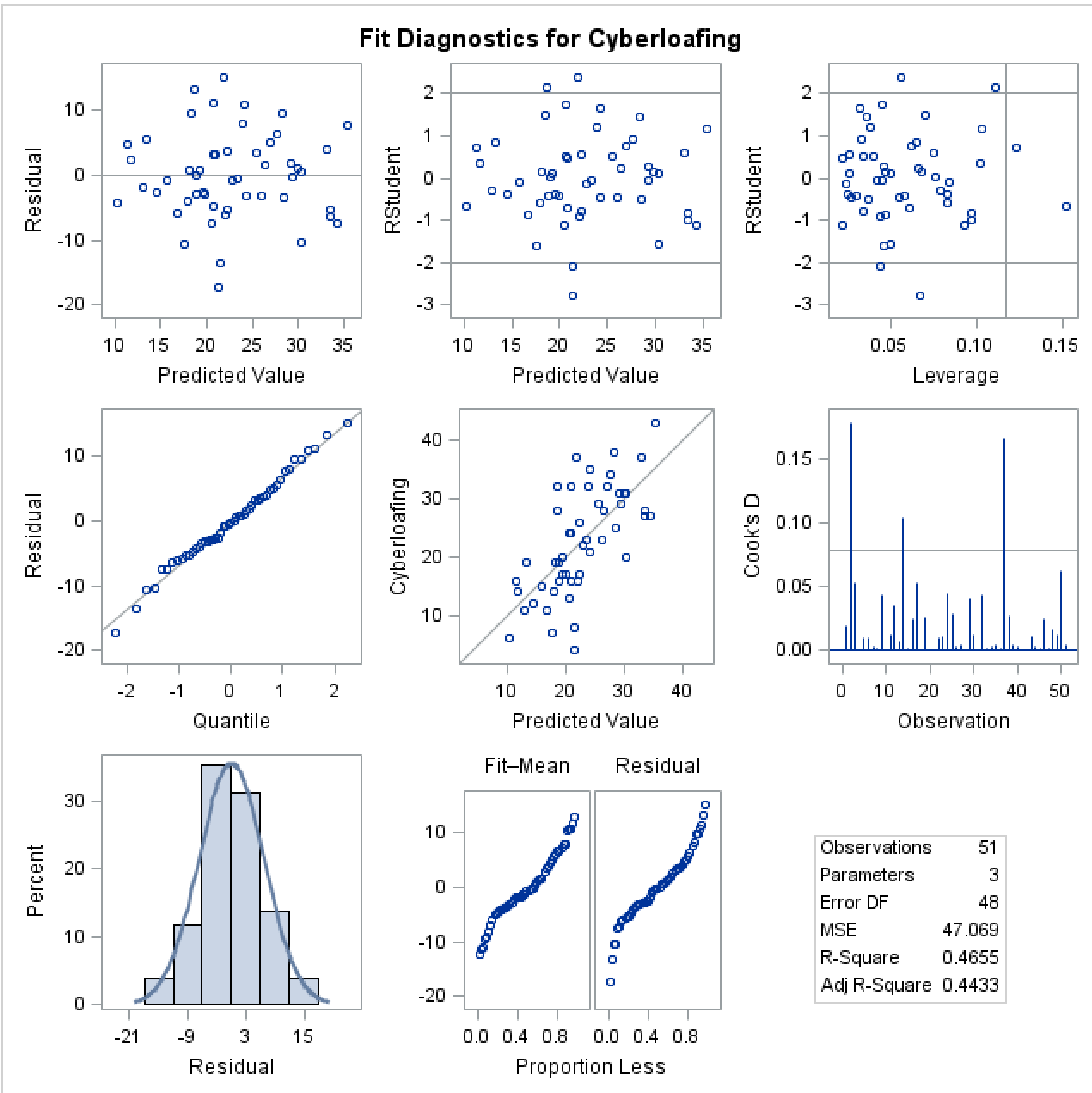
| Variable | DF | Parameter Estimate | Standard Error | t Value | Pr > \|t\| | Standardized Estimate | Squared Semi-partial Corr Type II | Squared Partial Corr Type II | Variance Inflation |
|---|---|---|---|---|---|---|---|---|---|
| **Intercept** | 1 | 64.06561 | 6.79175 | 9.43 | <.0001 | 0 | . | . | 0 |
| **Conscientiousness** | 1 | -0.77895 | 0.16369 | -4.76 | <.0001 | -0.50733 | 0.25213 | 0.32054 | 1.02083 |
| **Age** | 1 | -0.27560 | 0.07544 | -3.65 | 0.0006 | -0.38950 | 0.14861 | 0.21757 | 1.02083 |

When we had only one predictor, Conscientiousness, the $r^2$ was .3169. Adding age to the model increased the $R^2$ by .4655 - .3169 = .1486; this is the value of the squared semipartial correlation coefficient. That increase is significant, $t(48) = 3.65$, $p < .001$.

**Magnitude of the Semipartial Correlations.** Some people apply Cohen's guidelines for rho to beta weights, but it is better to use the semipartial correlations. Taking square roots to get the semipartials here, the *sr* for conscientiousness is .504, a large effect, and the *sr* for age is .385, a medium to large effect.

**Multicollinearity** exists when a predictor can be nearly perfectly predict from a weighted linear combination of the other predictors – that is, when $R^2_{i\bullet 12...(i)...p}$ is very large. In that case, the partial statistics would be unstable, that is, they would tend to vary wildly among samples drawn from the same population. The usual solution here is to drop variables from the model to eliminate the problem with multicollinearity. The **tolerance** statistic is computed as $1 - R^2_{i\bullet 12...(i)...p}$. So multicollinearity is present when a tolerance is very low. The **variance inflation factor (VIF)** is computed as 1/tolerance, so high values of VIF indicate a problem. So, how high must VIF get before we get worried? Some say 10, some say 5, and a few say 2.5. Clearly we have no problem with these data.




Notice that the residuals plot here is residual (score value minus predicted score value) versus predicted score. This plot is used to evaluate the homoscedasticity assumption and the assumption that the residuals are normally distributed at every value of the predicted scores. The residuals histogram compares the observed residuals with those that would be expected if they are normally distributed. There are no problems apparent here. The leverage and Cook's D plots are used to detect outliers. We shall discuss these statistics later, when I cover regression diagnostics.

```
PROC GLM data=Sage; model Cyberloafing = Conscientiousness / EFFECTSIZE ALPHA=.1; run;
quit;
```

**The GLM Procedure**

PROC GLM was used here to get a confidence interval for $\rho^2$ predicting cyberloafing from conscientiousness.

| Proportion of Variation Accounted for | |
|---|---|
| **Eta-Square** | 0.32 |
| **90% Confidence Limits** | (0.14,0.46) |

And here for the confidence interval for $\rho^2$ predicting cyberloafing from conscientiousness and age and confidence interval for the unique effects of each predictor. GLM calls the squared semipartial correlation coefficient the semipartial eta-squared. I'll explain later why this statistic is preferable to the squared partial correlation coefficient.

```
PROC GLM data=Sage; model Cyberloafing = Conscientiousness Age / EFFECTSIZE ALPHA=.1;
*If the leading * were removed, the below statement would compute confidence intervals for predicted Cyberloafing for each subject;
*print clm cli;
run; quit;
```

The GLM Procedure

| Proportion of Variation Accounted for | |
|---|---|
| **Eta-Square** | 0.47 |
| **90% Confidence Limits** | (0.27,0.58) |

Type III (unique) Effect Sizes

| Source | DF | Partial Variation Accounted For | | | | | |
|---|---|---|---|---|---|---|---|
| | | Semipartial Eta-Square | Conservative 90% Confidence Limits | | Partial Eta-Square | 90% Confidence Limits | |
| **Conscientiousness** | 1 | 0.2521 | 0.0916 | 0.3993 | 0.3205 | 0.1423 | 0.4580 |
| **Age** | 1 | 0.1486 | 0.0272 | 0.2955 | 0.2176 | 0.0649 | 0.3630 |

I also used my SAS program to get the confidence interval for $R^2$ -- Conf-Interval-R2-Regr.sas

Compute 90% Confidence Interval for R-squared, eta-squared, fixed effect ANOVA/regression

| Obs | eta_squared | eta2_lower | eta2_upper |
|---|---|---|---|
| **1** | 0.46560 | 0.27247 | 0.57713 |

## Presenting the Results, APA-Style

Multiple correlation/regression analysis was used to predict participants' cyberloading scores from their scores on conscientiousness and age. The data were screened for possible problems with the assumptions of homoscedasticity and normality. No problems were found. The optimally weighted linear combination of conscientiousness and age was significantly associated with cyberloafing, $R^2$ = .466, *F*(2, 48) = 20.91, *p* < .001, 90% CI [.272, .577] The partial effects of both predictors were significant. For conscientiousness, *t*(48) = 4.76, *p* < .001, β = -.507, $sr^2$ = .252, 90% CI [.092, .399], and for age, t(48) = 3.65, *p* < .001, β = -.390, $sr^2$ = .149, 90% CI [.065, .363].

---

```
*****************************************************************************;
title 'Importance of Plotting Your Data'; run;
*From PSYPARC gopher, Phil Wood, modified by K. Wuensch;
*Originally from Anscombe (1973), American Statistician, pp 17-21;

data PW; input x1 y1 x2 y2 x3 y3 x4 y4; cards;
10 8.04       10 9.14       10 7.46         8 6.58
 8 6.95        8 8.14        8 6.77         8 5.76
13 7.58       13 8.74       13 12.74        8 7.7
 9 8.81        9 8.77        9 7.11         8 8.84
11 8.33       11 9.26       11 7.81         8 8.47
14 9.96       14 8.10       14 8.84         8 7.04
6 7.24         6 6.13        6 6.08         8 5.25
4 4.26         4 3.10        4 5.39        19 12.50
12 10.84      12 9.13       12 8.15         8 5.56
7 4.82         7 7.26        7 6.42         8 7.91
5 5.68         5 4.74        5 5.73         8 6.89
;
proc reg simple; A: model y1 = x1;
  B: model y2 = x2;;
  C: model y3 = x3;
  D: model y4 = x4;  run; quit;
```

Importance of Plotting Your Data

**Descriptive Statistics**

| Variable | Sum | Mean | Uncorrected SS | Variance | Standard Deviation |
|---|---|---|---|---|---|
| **Intercept** | 11.00000 | 1.00000 | 11.00000 | 0 | 0 |
| **x1** | 99.00000 | 9.00000 | 1001.00000 | 11.00000 | 3.31662 |
| **y1** | 82.51000 | 7.50091 | 660.17270 | 4.12727 | 2.03157 |
| **x2** | 99.00000 | 9.00000 | 1001.00000 | 11.00000 | 3.31662 |
| **y2** | 82.51000 | 7.50091 | 660.17630 | 4.12763 | 2.03166 |
| **x3** | 99.00000 | 9.00000 | 1001.00000 | 11.00000 | 3.31662 |
| **y3** | 82.50000 | 7.50000 | 659.97620 | 4.12262 | 2.03042 |
| **x4** | 99.00000 | 9.00000 | 1001.00000 | 11.00000 | 3.31662 |
| **y4** | 82.50000 | 7.50000 | 659.97840 | 4.12284 | 2.03048 |

Notice that for each of the four X,Y sets, the means are 99 and 72.5 and the standard deviations are 3.3 and 2.0.

The REG Procedure
Model: A
Dependent Variable: y1

**Analysis of Variance**

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| Model | 1 | 27.51000 | 27.51000 | 17.99 | 0.0022 |
| Error | 9 | 13.76269 | 1.52919 | | |
| Corrected Total | 10 | 41.27269 | | | |

| | | | |
|---|---|---|---|
| Root MSE | 1.23660 | R-Square | 0.6665 |
| Dependent Mean | 7.50091 | Adj R-Sq | 0.6295 |

**Parameter Estimates**

| Variable | DF | Parameter Estimate | Standard Error | t Value | Pr > \|t\| |
|---|---|---|---|---|---|
| Intercept | 1 | 3.00009 | 1.12475 | 2.67 | 0.0257 |
| x1 | 1 | 0.50009 | 0.11791 | 4.24 | 0.0022 |

---

The REG Procedure
Model: B
Dependent Variable: y2

**Analysis of Variance**

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| Model | 1 | 27.50000 | 27.50000 | 17.97 | 0.0022 |
| Error | 9 | 13.77629 | 1.53070 | | |
| Corrected Total | 10 | 41.27629 | | | |

| | | | |
|---|---|---|---|
| Root MSE | 1.23721 | R-Square | 0.6662 |

**Parameter Estimates**

| Variable | DF | Parameter Estimate | Standard Error | t Value | Pr > \|t\| |
|---|---|---|---|---|---|
| Intercept | 1 | 3.00091 | 1.12530 | 2.67 | 0.0258 |
| x2 | 1 | 0.50000 | 0.11796 | 4.24 | 0.0022 |

The REG Procedure
Model: C
Dependent Variable: y3

**Analysis of Variance**

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| **Model** | 1 | 27.47001 | 27.47001 | 17.97 | 0.0022 |
| **Error** | 9 | 13.75619 | 1.52847 | | |
| **Corrected Total** | 10 | 41.22620 | | | |

| | | | |
|---|---|---|---|
| **Root MSE** | 1.23631 | **R-Square** | 0.6663 |
| **Dependent Mean** | 7.50000 | **Adj R-Sq** | 0.6292 |

**Parameter Estimates**

| Variable | DF | Parameter Estimate | Standard Error | t Value | Pr > \|t\| |
|---|---|---|---|---|---|
| **Intercept** | **1** | 3.00245 | 1.12448 | 2.67 | 0.0256 |
| **x3** | **1** | 0.49973 | 0.11788 | 4.24 | 0.0022 |

The REG Procedure
Model: D
Dependent Variable: y4

**Analysis of Variance**

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| **Model** | 1 | 27.50000 | 27.50000 | 18.03 | 0.0022 |
| **Error** | 9 | 13.72840 | 1.52538 | | |
| **Corrected Total** | 10 | 41.22840 | | | |

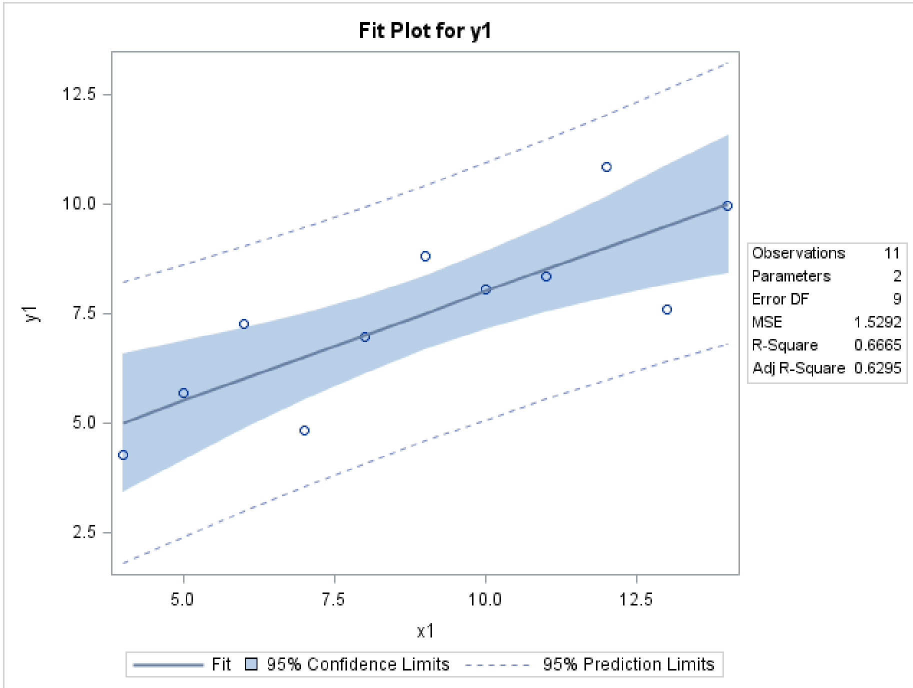
| | | | |
|---|---|---|---|
| **Root MSE** | 1.23506 | **R-Square** | 0.6670 |
| **Dependent Mean** | 7.50000 | **Adj R-Sq** | 0.6300 |

**Parameter Estimates**

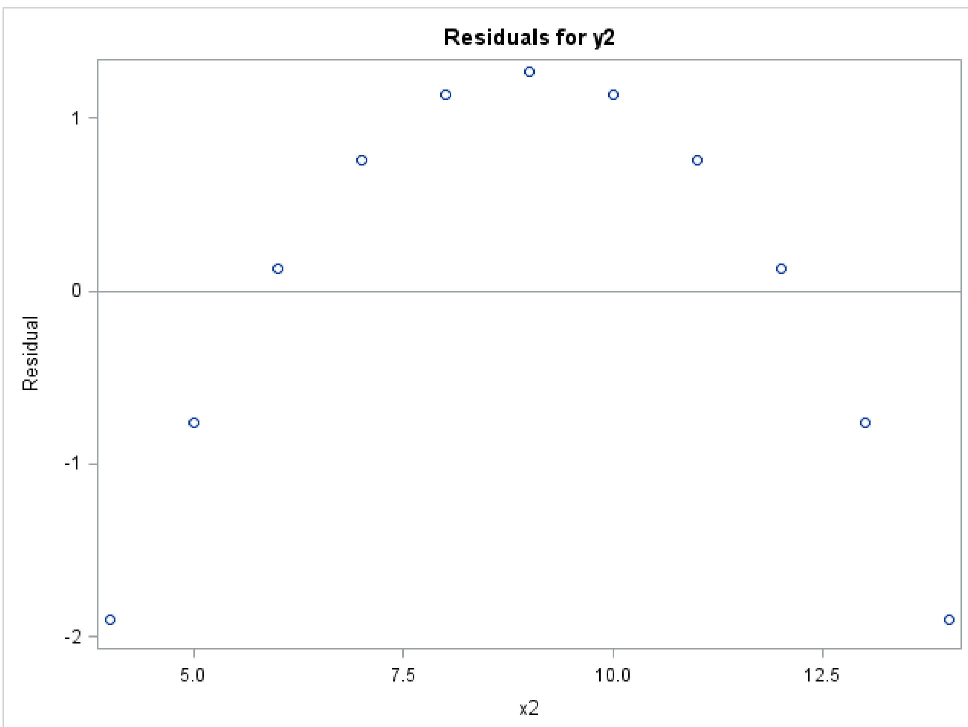
| Variable | DF | Parameter Estimate | Standard Error | t Value | Pr > \|t\| |
|---|---|---|---|---|---|
| **Intercept** | **1** | 3.00000 | 1.12334 | 2.67 | 0.0256 |
| **x4** | **1** | 0.50000 | 0.11776 | 4.25 | 0.0022 |

Notice that for each of the X,Y pairs, the $r^2$ is .67, the intercept is 3, and the slope is .5.

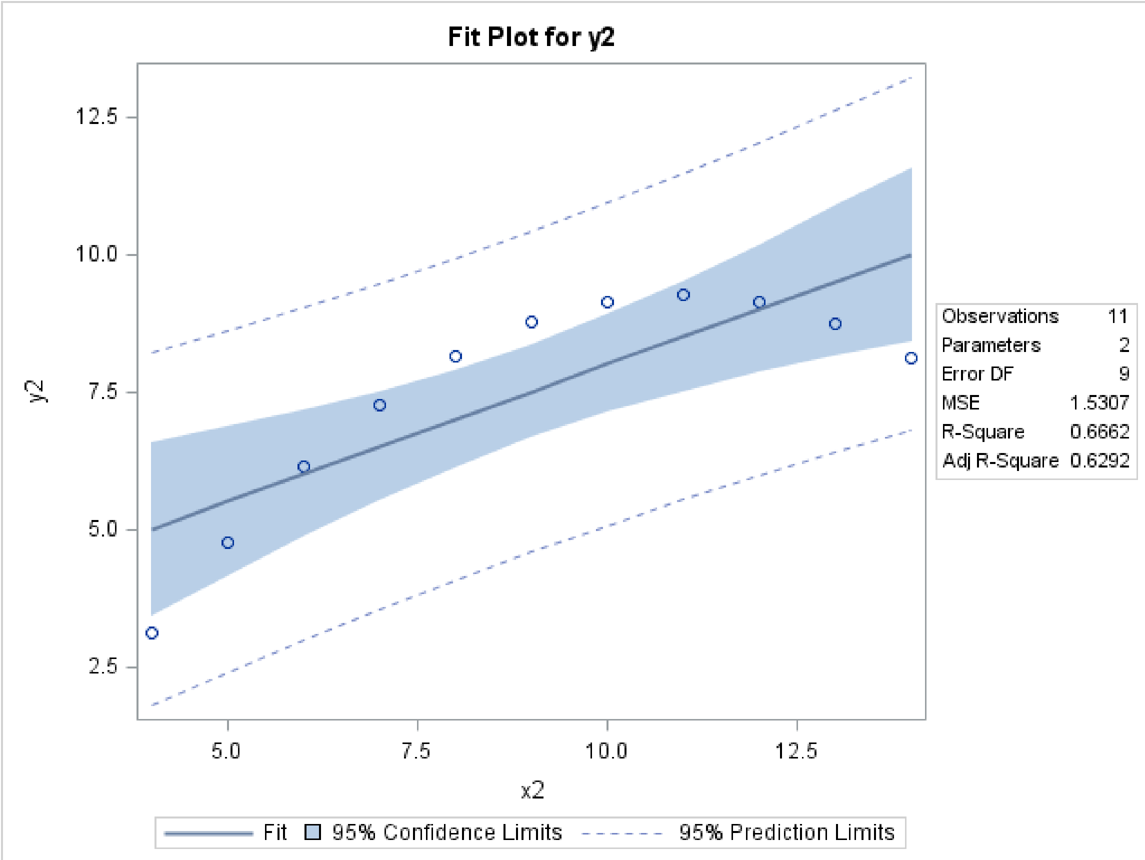
Below is the sort of plot that most researchers would anticipate for an $r^2$ of .67.



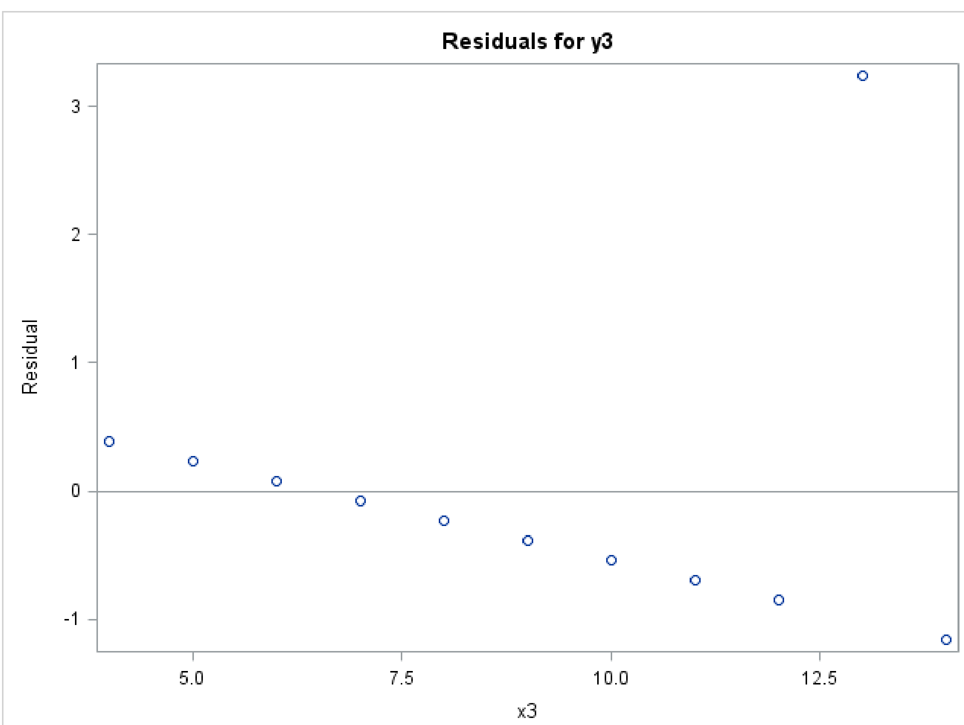

The residuals plot for X2, Y2 is quite revealing. It shows that there is a quadratic effect not included in the model.



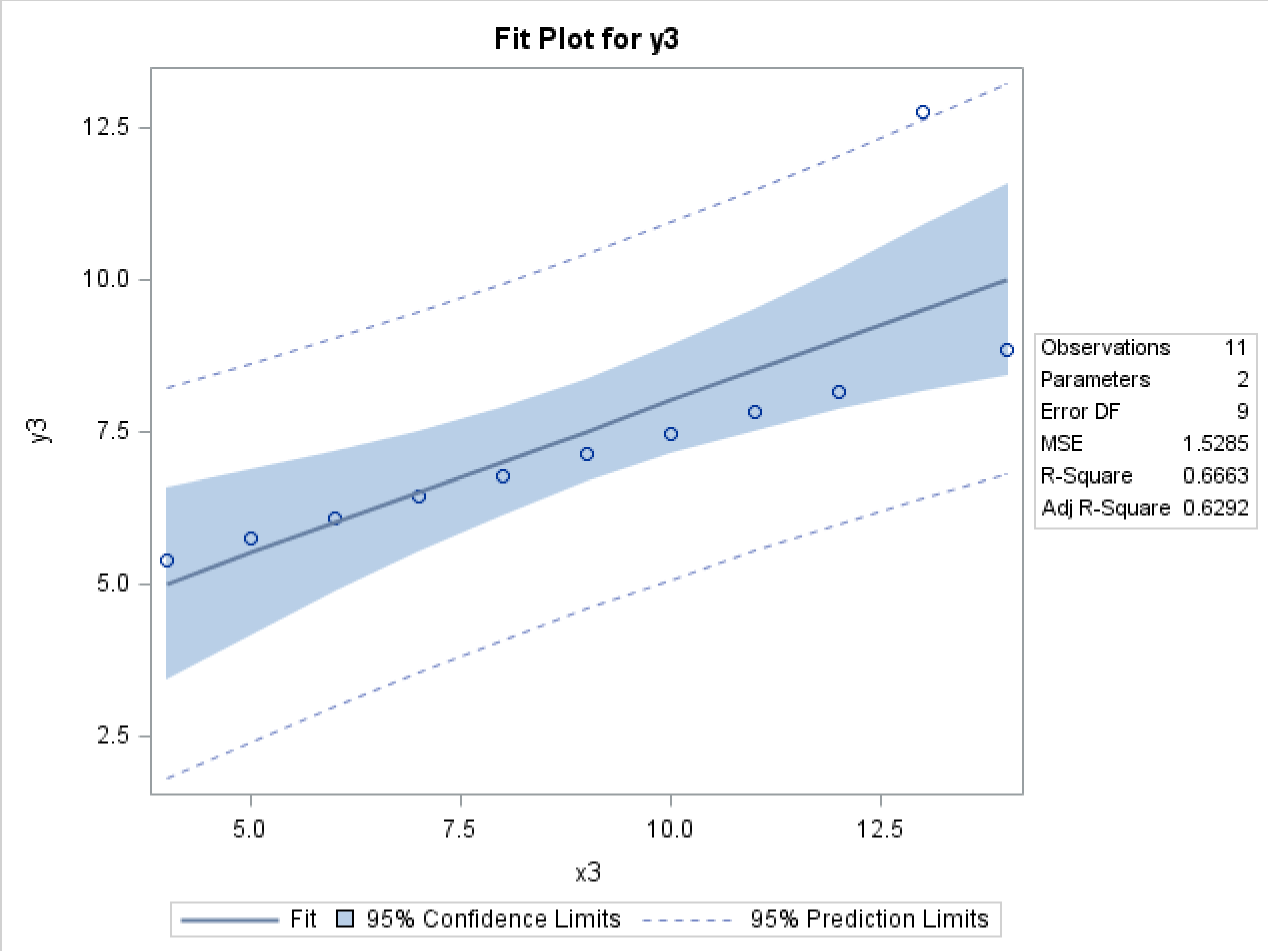
Here you see that the relationship between X2 and Y2 is actually perfect, but it is not linear.



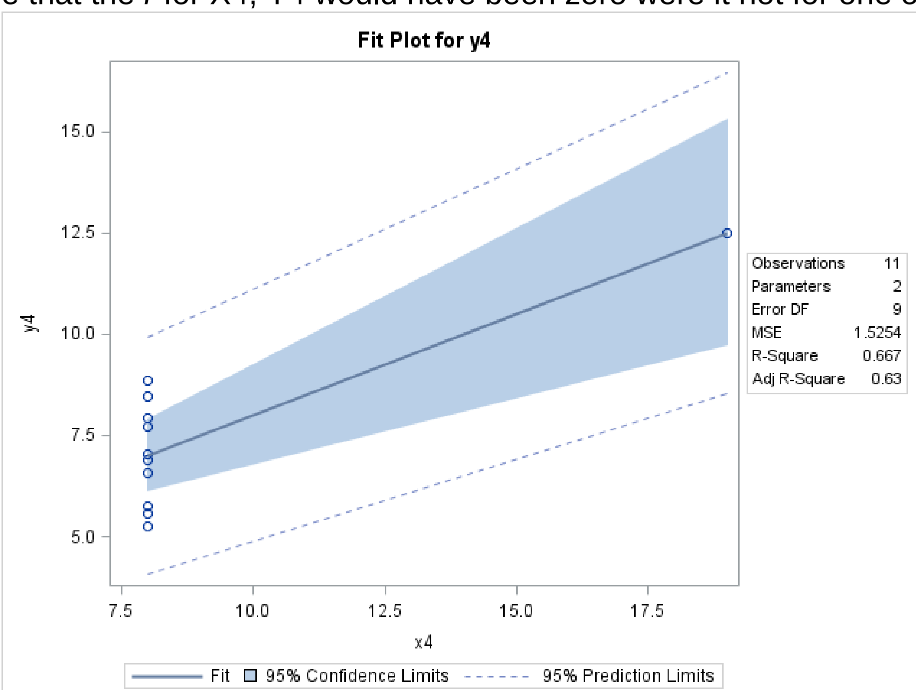

The residuals plot for X3, Y3 is also quite revealing. One observation has a very high residual. Such a case is going to have a large effect on the solution, pulling the regression line toward itself.



Here we see that were it not for that one outlier, the relationship between X3 and Y3 would have been perfect.




Here we see that the *r* for X4, Y4 would have been zero were it not for one outlier



**Moderation Analysis – is the relationship between Y and $X_1$ modified by the value of $X_2$?**

```
*****************************************************************************;
title 'Ar-Misanth Relationship for Nonidealists versus Idealists.'; run;
proc format; value I 0='NonIdealist' 1='Idealist';
data kevin2; infile 'C:\Users\Vati\Documents\StatData\potthoff.dat'; input ar misanth idealism;
format idealism I.;
proc sort; by idealism;
proc reg simple corr; model ar=misanth;
by idealism; run; quit;
```

The REG Procedure
idealism=NonIdealist

**Descriptive Statistics**

| Variable | Sum | Mean | Uncorrected SS | Variance | Standard Deviation |
|---|---|---|---|---|---|
| **Intercept** | 91.00000 | 1.00000 | 91.00000 | 0 | 0 |
| **misanth** | 216.20000 | 2.37582 | 554.44000 | 0.45319 | 0.67319 |
| **ar** | 212.82100 | 2.33869 | 525.45037 | 0.30808 | 0.55505 |

**Correlation**

| Variable | misanth | ar |
|---|---|---|
| **misanth** | 1.0000 | 0.3639 |
| **ar** | 0.3639 | 1.0000 |

**Analysis of Variance**

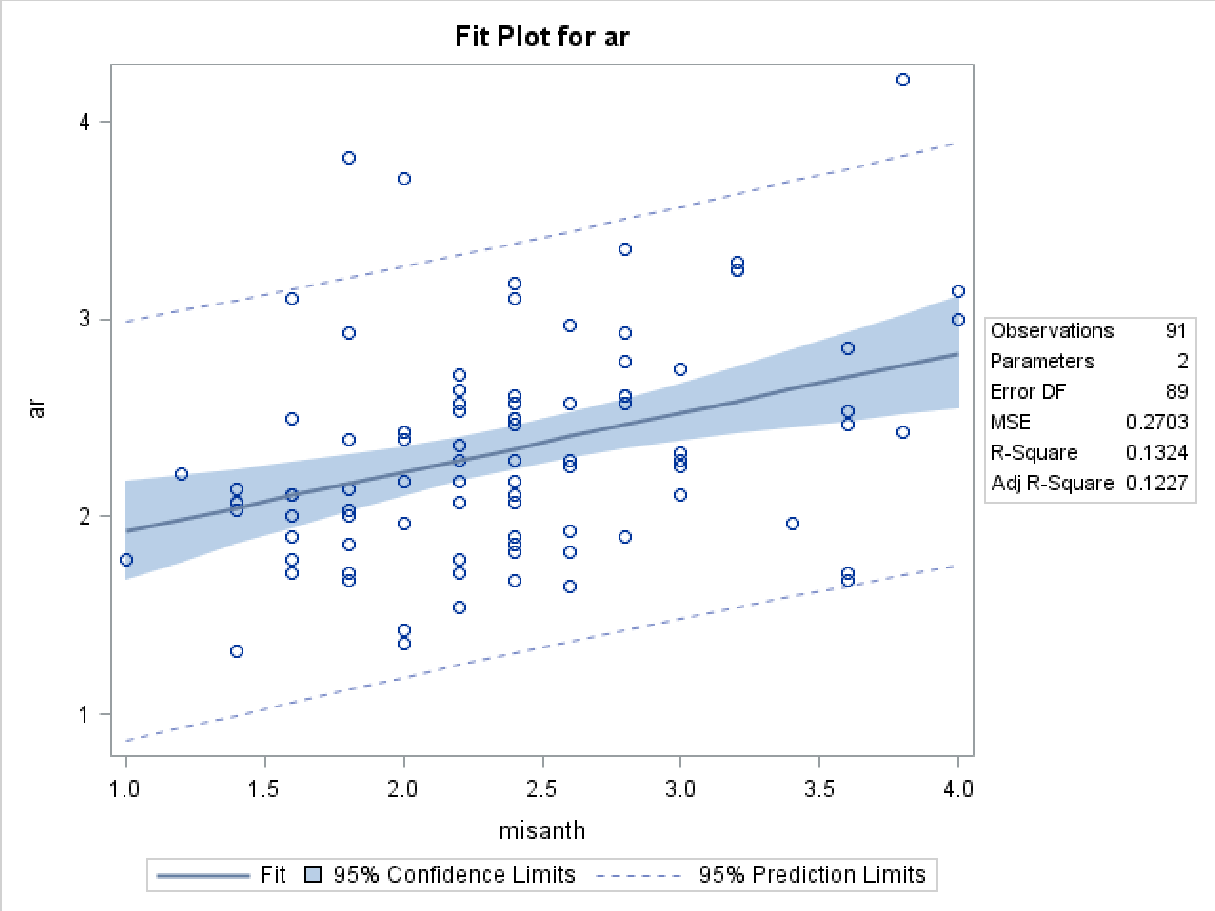
| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| **Model** | 1 | 3.67218 | 3.67218 | 13.59 | 0.0004 |
| **Error** | 89 | 24.05535 | 0.27028 | | |
| **Corrected Total** | 90 | 27.72753 | | | |

| | | | |
|---|---|---|---|
| **Root MSE** | 0.51989 | **R-Square** | 0.1324 |
| **Dependent Mean** | 2.33869 | **Adj R-Sq** | 0.1227 |
| **Coeff Var** | 22.22991 | | |

**Parameter Estimates**

| Variable | DF | Parameter Estimate | Standard Error | t Value | Pr > \|t\| |
|---|---|---|---|---|---|
| **Intercept** | **1** | 1.62581 | 0.20094 | 8.09 | <.0001 |
| **misanth** | **1** | 0.30006 | 0.08140 | 3.69 | 0.0004 |

Among non-idealists, misanthropy is significantly associated with support for animal rights, $r(n = 91) = .36$, $p < .001$, 95% CI [.17, .53].




Now, for the idealists.

The REG Procedure
Model: MODEL1
Dependent Variable: ar
idealism=Idealist

| | |
|---|---|
| **Number of Observations Read** | 63 |
| **Number of Observations Used** | 63 |

**Descriptive Statistics**

| Variable | Sum | Mean | Uncorrected SS | Variance | Standard Deviation |
|---|---|---|---|---|---|
| **Intercept** | 63.00000 | 1.00000 | 63.00000 | 0 | 0 |
| **misanth** | 141.20000 | 2.24127 | 344.40000 | 0.45053 | 0.67121 |
| **ar** | 153.64900 | 2.43887 | 390.42107 | 0.25308 | 0.50307 |

**Correlation**

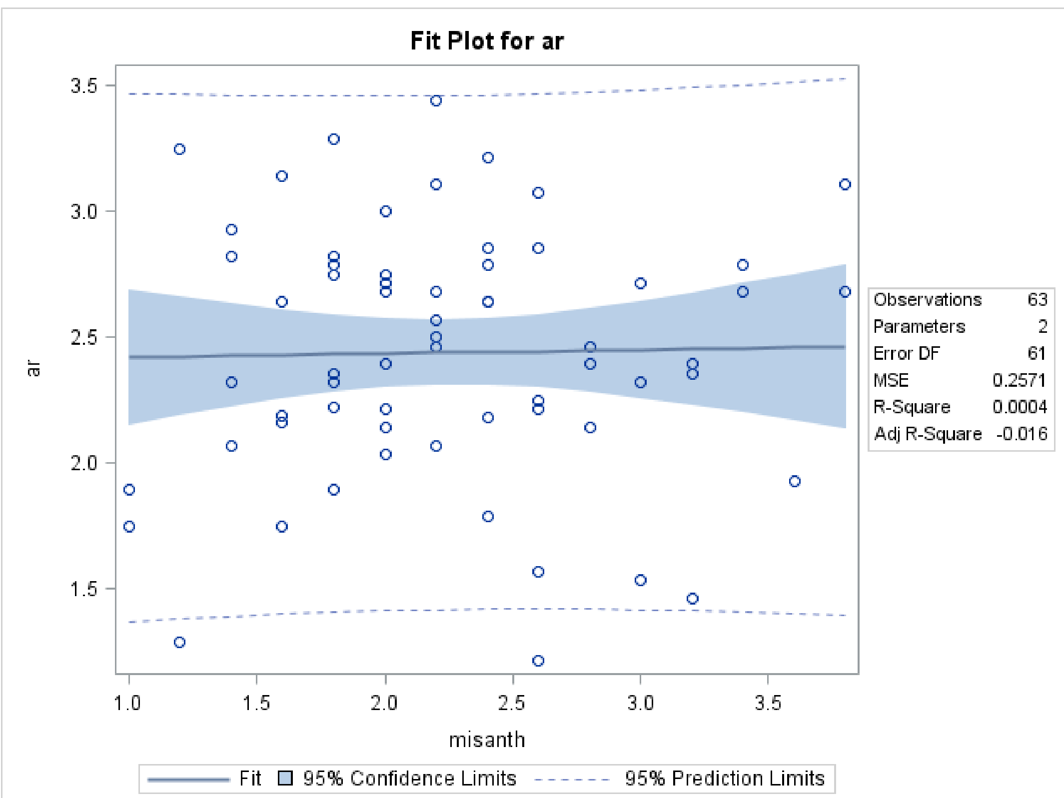
| Variable | misanth | ar |
|---|---|---|
| **misanth** | 1.0000 | 0.0205 |
| **ar** | 0.0205 | 1.0000 |

| Analysis of Variance | | | | | |
|---|---|---|---|---|---|
| **Source** | **DF** | **Sum of Squares** | **Mean Square** | **F Value** | **Pr > F** |
| **Model** | 1 | 0.00657 | 0.00657 | 0.03 | 0.8735 |
| **Error** | 61 | 15.68410 | 0.25712 | | |
| **Corrected Total** | 62 | 15.69067 | | | |

| | | | |
|---|---|---|---|
| **Root MSE** | 0.50707 | **R-Square** | 0.0004 |
| **Dependent Mean** | 2.43887 | **Adj R-Sq** | -0.0160 |
| **Coeff Var** | 20.79102 | | |

| Parameter Estimates | | | | | |
|---|---|---|---|---|---|
| **Variable** | **DF** | **Parameter Estimate** | **Standard Error** | **t Value** | **Pr > \|t\|** |
| **Intercept** | **1** | 2.40450 | 0.22432 | 10.72 | <.0001 |
| **misanth** | **1** | 0.01533 | 0.09594 | 0.16 | 0.8735 |

Among the idealists, misanthropy was not significantly associated with support for animal rights, $r(n = 63) = .02$, $p = .87$, 95% CI [-.23, .27].




Later I shall show you more sophisticated methods of moderation analysis.

Return to my SAS Lessons page.