K. Fair - Homework #3
EDRS 811

ANOVA

Use the Weightloss dataset. For each of the following, write your answer in APA format and include the correct **essential** output with your answer. Make sure you test the appropriate assumptions for each test (examine normality).

1. **For each of your continuous variables, identity any outliers and delete them if appropriate.**

2. **Describe your sample in terms of age, gender, and ethnicity.**
   There were a total of 54 participants: 29 males and 24 females. Participants ranged in age from 28 to 45 years with a mean of 36.54 years (*SD*=5.11997). The ethnicity of the participants included 27 African Americans (50.9%) and 25 Caucasians (49.1%). One outlier with a recorded age of 2 years was removed.

3. **Test the hypothesis that satisfaction with treatment differed between clinics.**
   An independent samples t test was conducted to determine if the average level of satisfaction with treatment was different between clinic a and clinic b. The assumption of normality was tested and the review of the SW test for normality indicated a significant level of non-normality for clinic a (*SW* = .885, *df* = 27, *p* = .006). Skewness, (-.518), kurtosis (-1.070), and observed values on the Q-Q plot suggested normality of level of satisfaction with clinic a was a reasonable assumption. Review of the SW test for normality for clinic b (*SW* = .925, *df* = 26, *p* = .050) and skewness (.024) and kurtosis (-1.017) statistics suggested that normality of level of satisfaction with clinic b was a reasonable assumption. The box plot suggested some non-normality in the distribution in the satisfaction with treatment with clinic a with a smaller range of the distribution in Q3 and Q4, and some non-normality in the distribution of satisfaction with treatment in clinic b with a smaller range of the distribution in Q1 and Q2. There were no outliers for either clinic 1 or clinic 2. According to Levene's test, the homogeneity of variance assumption was satisfied (*F*(51) =1.158, *p*=.285)

   The independent t test indicated that the average level of satisfaction was not significantly different for clinic a and clinic b (*t*(51)=1.859, *p*=.069). Thus the null hypothesis that the average level of satisfaction between clinics was accepted.

4. **Answer the question: Do the four treatments results in the same amount of weight lost?**
   A one-way ANOVA was conducted to determine if the mean amount of weight lost by participants differed by treatment. The assumption of normality was tested and met via examination of the residuals. Review of the S-W test for normality (*SW* = .961, *df* = 53, *p* = .081) and skewness (.289) and kurtosis (-.800) statistics suggested that normality was a reasonable assumption. The boxplot suggested a relatively normal distributional shape

Erin Peters-Burton 11/15/2015 7:01 PM
Comment [1]: 97%

Erin Peters-Burton 11/15/2015 5:41 PM
Comment [2]: Good

Erin Peters-Burton 11/15/2015 5:41 PM
Comment [3]: Failed to be rejected

(with no outliers) of the residuals. A visual review of the Q-Q plot suggested normality was reasonable. The assumption of independence was met by the random assignment of individuals to groups. According to Levene's test, the homogeneity of variance assumption as satisfied ($F(3, 49) = 1.465$, $p = .236$).

The one-way ANOVA indicated that there was a statistically significant difference ($F = 27.213$, $df = 3, 49$, $p = .000$) between the amount of weight lost between the four treatment groups, the effect size is large ($\eta^2 = .625$; suggesting about 62% of the variance of amount of weight lost is due to the difference in treatments), the observed power is strong (1.00). The means and standard deviations of the treatment groups were as follows: 6.5000 ($SD = 2.24465$) for the placebo group, 9.2857 ($SD = 3.04905$) for the hypnosis group, 6.0000 (SD – 2.04124) for the relaxation group, and 14.000 ($SD = 2.44949$) for the cognitive behavioral therapy group.

A post hoc Tukey test was conducted on all possible pairwise contrasts. The following pairs of treatment groups were found to be significantly different ($p < .05$): hypnosis ($M = 9.2857$, $SD = 3.04905$) and placebo ($M = 6.5000$, $SD = 2.24465$), hypnosis and relaxation ($M = 6.0000$, $SD = 2.04124$), hypnosis and cognitive behavioral therapy ($M = 14$, $SD = 2.44949$), placebo and cognitive behavioral therapy, and relaxation and cognitive behavioral therapy. In other words, the hypnosis group lost statistically significantly more weight than the placebo and relaxation groups; and the cognitive behavioral therapy group lost statistically significantly more weight than the hypnosis, the placebo, and the relaxation groups.

Erin Peters-Burton 11/15/2015 5:42 PM
Comment [4]: Great!

5. **Answer the question: Do the four treatment groups result in the same amount of eating control?**
A one-way ANOVA was conducted to determine if the mean score of the post-treatment eating control by participants differed by treatment. The assumption of normality was tested and met via examination of the residuals. Review of the S-W test for normality ($SW = .978$, $df = 53$, $p = .248$) and skewness (.348) and kurtosis (.025) statistics suggested that normality was a reasonable assumption. The boxplot suggested a relatively normal distributional shape (with no outliers) of the residuals. The Q-Q plot suggested normality was reasonable. The assumption of independence was met by the random assignment of individuals to groups. According to Levene's test, the homogeneity of variance assumption as satisfied ($F(3, 49) = .922$, $p = .437$).

The one-way ANOVA indicated that there was a statistically significant difference ($F = 10.486$, $df = 3, 49$, $p = .000$) between the amount of eating control between the four treatment groups. The effect size is medium ($\eta^2 = .391$; suggesting about 39% of the variance of amount of eating control is due to the difference in treatments), the observed power is strong (.998). The means and standard deviations of the treatment groups were as follows: 6.7143 ($SD = 2.99817$) for the placebo group, 9.2143 ($SD = 3.26234$) for the hypnosis group, 7.0000 ($SD = 2.48328$) for the relaxation group, and 12.1667 ($SD = 2.03753$) for the cognitive behavioral therapy group.

A post hoc Tukey test was conducted on all possible pairwise contrasts. The following pairs of treatment groups were found to be significantly different ($p < .05$): cognitive behavioral therapy ($M = 12.1667$, $SD = 2.03753$) and placebo ($M = 6.7143$, $SD = 2.99817$), cognitive behavioral therapy and hypnosis ($M = 9.2143$, $SD = 3.26234$), and cognitive behavioral therapy and relaxation ($M = 7.0000$, $SD = 2.48328$). In other words the cognitive behavioral therapy group have a statistically significantly higher level of eating control than the placebo, the hypnosis, and the relaxation groups.

Erin Peters-Burton 11/15/2015 5:42 PM
Comment [5]: Well done!!

Chi-square

1. Use the Cheating data set to determine if the math grade distribution is a normal distribution Use 5% A's, 10% A/B's, 12% B's, 15% B/C's, 16% C's, 15% C/D's 12% D's, 10% D/F's and 5% F's.
   a. **Is this a hypothesis of no preference or of no difference? How do you know?**
      The hypothesis is no difference from the given expected percentages. No preference would indicate the same proportion across categories.

   b. **What is the expected frequency for "mostly A's"? How was it calculated?**
      The expected frequency for "mostly As" is 6.1. It is the expected proportion (5%) times the number of participants (123)

   c. **Is the grade distribution normal?**
      Chi-square is 275, $p = .000$, so the grade distribution does not match the normal distribution in the question.

      Erin Peters-Burton 11/15/2015 6:19 PM
      Comment [6]: Calculate the residuals (-3)

      or …

      The grade distribution does not appear to be normal. Review of the S-W test for normality ($SW = .876$, $df = 123$, $p = .000$) showed a significant amount of non-normality. Though skewness (.714) and kurtosis (-.045) were within the normal range, a visual review of the histogram and box plot showed the data was positively skewed with one outlier, which was not removed for this test since normality is not an assumption for the chi-square goodness of fit.

   d. **What is the df for this test? How was it calculated?**
      df for this test is 8 or the number of categories (9) – 1.

   e. **Write up the results in APA format.**
      A chi-square goodness-of-fit test was conducted to determine if the sample proportions of math grades were the same as a normal distribution. The test was conducted using an alpha of .05. The null hypothesis was that the grade proportions would be as follows: .05 A, .10A/B, .12 B, .15 B/C, .16 C, .15 C/D, .12 D, .10 D/F's and .05 F. The assumption of an expected frequency of at least 5 per cell was met. The assumption of independence was met via random selection.

      As shown in the attached table, there was a statistically significant difference between the proportions of sample grades from the normal distribution ($\chi^2 = 275.005$, $df – 8$, p

= .000). Thus the null hypothesis that the proportions of sample grades were the same as expected in a normal distribution was rejected at the .05 level of significance. The effect size (χ^2/[N(J-1)]) was small to medium at .2795 using Cohen's guide.

2. Use the Cheating data set to determine if there is a relationship between GPA and grade level.
   a. **What is the expected frequency for 9th grade /4.0 calculated? (show your work)**
      Total count of students with a 4.0 (20) times the total marginal percent of 9th graders (63/121 = 52.1%) gives a total expected count of 10.4.

   b. **Are GPA and grade level related?**
      Not significant at the 5% level

   c. **What is the df for this test? How was it calculated?**
      df = 5, (gpa categories -1)(grade categories -1) = (6-1)(2-1)

   d. **Write up the results in APA format.**
      A chi-square test of association was conducted to determine if there was a relationship between GPA and grade level. The test was conducted using an alpha of .05. It was hypothesized that there was an association between the two variables. The assumption of an expected frequency of at least 5 per cell was not met with 2 cells that had an expected count of less than 5. The assumption of independence was met via random selection.

      The chi-square test (χ^2 = 11.046, *df* – 5, *p* = .050) showed no significant relationship between GPA and grade level, thus the null hypothesis that there is no relationship was not rejected.

Erin Peters-Burton 11/15/2015 6:19 PM
Comment [7]: Good!

Correlation

1. **Use the cheating data set to determine the relationship between Academic Self Efficacy, Mastery Goal Orientation (focus on learning), and Focus on Demonstrating Ability. (Include cross products and covariance).**
   Participant 60 excluded as an outlier in self-efficacy
   Participants 79 and 106 excluded as outliers for Mastery Orientation

   self-efficacy and mastery *r* = .539, *n* = 120, *p* = .000, cov = .37702
   mastery and demonstrating ability *r* = .294, *n* = 120, *p* = .001, cov = .25411
   self-efficacy and demonstrating ability *r* = .167, *n* = 120, *p* = .069, cov = .11681

Erin Peters-Burton 11/15/2015 6:38 PM
Comment [8]: Great!

a. **Show how the calculation for the Pearson r between Self-Efficacy and Mastery Orientation was obtained. (You will need to use SPSS to calculate some descriptive statistics).**
Created column (Self-Efficacy – 3.7879)(Focus on learning – 3.7663).
44.9 (sum of column)/ (120-1) = .3773109 (cov)
Divide this by the product of the stand deviations:
.3773109/ (.83789*.83481) = .53941 (Pearson r)

b. Find these correlations (from a) for each gender.
Focus on demonstrating, 1 outlier male
Self efficacy, 2 outliers female,
Mastery, 1 outlier female

Male:
self-efficacy and mastery $r = .619$, $n = 49$, $p = .000$, cov = .66105
mastery and demonstrating ability $r = .208$, $n = 49$, $p = .151$, cov = .17761
self-efficacy and demonstrating ability $r = .139$, $n = 49$, $p = .34$, cov = .13274

Female:
self-efficacy and mastery $r = .482$, $n = 71$, $p = .000$, cov = .24707
mastery and demonstrating ability $r = .361$, $n = 71$, $p = .002$, cov = .26922
self-efficacy and demonstrating ability $r = .211$, $n = 71$, $p = .078$, cov = .09484

c. Write 3-4 sentences to explain your findings for the full group and by gender.

A Pearson correlation was computed to determine if there is a relationship between Academic Self Efficacy, Mastery Goal Orientation, and Focus on Demonstrating Ability. For the full group a moderate positive relationship was found between Self-Efficacy and Mastery Goal Orientation ($r = .539$, $n = 120$, $p = .000$), a weak positive relationship was found between Mastery Goal Orientation and Focus on Demonstrating Ability ($r = .294$, $n = 120$, $p = .001$), and a weak positive relationship was found between Self-Efficacy and Mastery Goal Orientation ($r = .167$, $n = 120$, $p = .069$). The null was rejected at the alpha level of .05 for the relationship between Self-Efficacy and Mastery Goal Orientation, and the relationship between Mastery Goal Orientation and Focus on Demonstrating Ability.

For the male subgroup a moderate positive relationship was found between Self-Efficacy and Mastery Goal Orientation ($r = .619$, $n = 49$, $p = .000$), a weak positive relationship was found between Mastery Goal

Orientation and Focus on Demonstrating Ability (r = .208, n = 49, p = .151), and a weak positive relationship was found between Self-Efficacy and Mastery Goal Orientation (r = .139, n = 49, p = .34). The null was rejected at the alpha level of .05 for the relationship between Self-Efficacy and Mastery Goal Orientation.

For the female subgroup a moderate positive relationship was found between Self-Efficacy and Mastery Goal Orientation (r = .482, n = 71, p = .000), a weak positive relationship was found between Mastery Goal Orientation and Focus on Demonstrating Ability (r = .361, n = 71, p = .002), and a weak positive relationship was found between Self-Efficacy and Mastery Goal Orientation (r = .211, n = 71, p = .078). The null was rejected at the alpha level of .05 for the relationship between Self-Efficacy and Mastery Goal Orientation, and the relationship between Mastery Goal Orientation and Focus on Demonstrating Ability.

Erin Peters-Burton 11/15/2015 6:38 PM
Comment [9]: Good!

ANOVA—post-hocs & planned comparisons

Using the cheating data set, run the appropriate analysis and write-up your results in APA format for each of the following:

1 **Run a one-way ANOVA with an appropriate post-hoc test to examine the following the research question: Does self-efficacy differ between those students who have mostly A's & mostly A's & B's vs. Mostly B's & Mostly B's & C's vs. students in all other grade categories in math? (hint: you will need to recode the math variable).**

A one-way ANOVA was conducted to determine if the mean level of self-efficacy differed between students whose math grades are mostly A and A/B vs. mostly B and B/C, vs. students in all other grade categories. The assumption of normality was tested and met via examination of the residuals. Though the S-W test for normality indicates a significant non-normality (SW = .967, df = 123, p = .004), skewness (-.362), and kurtosos (-.541), and a visual review of the Q-Q plot and boxplot suggest that it is reasonable to assume that the population is normally distributed. According to Levene's test, the homogeneity of variance assumption was satisfied [F(2, 120) = .256, p = .774). The assumption of independence was met by the random assignment of participants.

The one-way ANOVA is statically significant (F = 18.976, df = 2, 120, p = .000), the effect size is small (η^2= .240; suggesting about 24% of the variance of self-efficacy is due to the difference in grade levels), and observed power is strong (1.000). The means and standard deviations of the grade levels were as follows: for group A, A/B 4.2275 (SD = .72113); for group B, B/C 3.5580 (SD = .75736); and for group C-F 3.1714 (SD = .87891). The means and profile plot suggest that as grade levels decreased, there was a corresponding reduction in the measure of self-efficacy.

A post hoc Tukey test was conducted on all possible pairwise contrasts. The following pairs of treatment groups were found to be significantly different ($p < .05$): A, A/B ($M = 4.2275$, $SD = .7213$) and B, B/C ($M = 3.5580$, $SD = .75736$); and A, A/B and C-F ($M = 3.1714$, $SD = .87891$). In other words, the level of self-efficacy was significantly higher for the A, A/B group than the B, B/C and the C-F groups.

A priori planned contrasts also indicate that the following sets of treatment groups were significantly different ($p < .05$): the combined B, B/C and C-F groups vs. the A,A/B group ($p = 000$); the B, B/C vs. the C-F group ($p = .041$); the A, A/B vs. the B, B/C group ($p = .000$); and the A, A/B group vs. the C-F group ($p = .000$).

*How do we know when it is not reasonable to assume?

Erin Peters-Burton 11/15/2015 7:00 PM
Comment [10]: When you do investigations, you will know the design better than you do in this class.

2. Examine the variables in the cheating data set and write a research question that can be answered with a planned comparison in a one-way ANOVA (you may recode variables). Carry out this analysis and present your results in APA format.

Does the likelihood of cheating differ between those students whose GPAs are 4.0 vs. 3.5-3.9 vs. 3.0-3.4 vs. 2.5-2.9 vs. below 2.5.

Erin Peters-Burton 11/15/2015 7:00 PM
Comment [11]: Good question

A one-way ANOVA was conducted to determine if the likelihood of cheating differed between students whose GPAs were 4.0 vs. 3.5-3.9 vs. 3.0-3.4 vs. 2.5-2.9 vs. below 2.5. The assumption of normality was tested and met via examination of the residuals. Review of the S-W test for normality ($SW = .967$, $df = 120$, $p = .005$), skewness (-.002), and kurtosos (-1.014), and a visual review of the Q-Q plot and boxplot suggest that it is reasonable to assume that the population is normally distributed. According to Levene's test, the homogeneity of variance assumption was satisfied [$F(4, 115) = .763$, $p = .551$). The assumption of independence was met by the random assignment of participants. One outlier was removed.

The one-way ANOVA is not statically significant ($F = .872$, $df = 4, 118$, $p = .483$). The means and standard deviations of the likelihood of cheating by GPA were as follows: for 4.0, $M = 3.6$ ($SD = 1.55259$); for 3.5-3.9, $M = 3.8056$ ($SD = 1.37984$); for 3.0-3.4, $M = 3.7593$ ($SD = 1.46347$); for 2.5-2.9, $M = 3.4048$; for below 2.5, $M = 4.2500$ ($SD = 1.30384$).

Because of the unequal number of participants in each group, a post hoc Games-Howell test was conducted on all possible pairwise contrasts. No significant difference ($p < .05$): was found between pairs of GPA groups.

A priori planned contrasts found no significant difference between students who's GPAs were between 3.5-4.0 vs. below 3.5; no significant difference between students who's GPAs were between 3.0-4.0 vs. below 3.0. There was a significant difference between students who's GPAs were between 2.5-4.0 vs. below 2.5 ($p = .000$). In other words, the likelihood of cheating score was significantly higher for students who's GPAs were below 2.5 than students who's GPAs were 2.5 or above.

Erin Peters-Burton 11/15/2015 7:00 PM
Comment [12]: Nailed it!

Homework #3 Supporting Docs
EDRS 811

Erin Peters-Burton 11/15/2015 7:00 PM
Comment [13]: Thanks for putting this as an appendix!

Supporting Docs Table of Contents

ANOVA 2 Descriptive Statistics.

All Data

Frequencies

Statistics

		Age in years	Gender	ethnicity
N	Valid	54	54	54
	Missing	0	0	0
Mean		35.9074	1.4630	1.4815
Std. Error of Mean		.94105	.06849	.06863
Median		35.0000	1.0000	1.0000
Mode		35.00	1.00	1.00
Std. Deviation		6.91531	.50331	.50435
Variance		47.821	.253	.254
Skewness		-2.038	.153	.076
Std. Error of Skewness		.325	.325	.325
Kurtosis		9.688	-2.054	-2.072
Std. Error of Kurtosis		.639	.639	.639
Range		43.00	1.00	1.00

Minimum		2.00	1.00	1.00
Maximum		45.00	2.00	2.00
Sum		1939.00	79.00	80.00
Percentiles	25	32.0000	1.0000	1.0000
	50	35.0000	1.0000	1.0000
	75	41.2500	2.0000	2.0000

Frequency Table

Age in years

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	1	1.9	1.9	1.9
	28.00	1	1.9	1.9	3.7
	29.00	1	1.9	1.9	5.6
	30.00	4	7.4	7.4	13.0
	31.00	3	5.6	5.6	18.5
	32.00	5	9.3	9.3	27.8
	33.00	6	11.1	11.1	38.9
	34.00	1	1.9	1.9	40.7
	35.00	7	13.0	13.0	53.7
	36.00	2	3.7	3.7	57.4
	37.00	3	5.6	5.6	63.0
	38.00	1	1.9	1.9	64.8
	39.00	1	1.9	1.9	66.7
	40.00	4	7.4	7.4	74.1
	41.00	1	1.9	1.9	75.9
	42.00	1	1.9	1.9	77.8
	43.00	5	9.3	9.3	87.0
	44.00	3	5.6	5.6	92.6
	45.00	4	7.4	7.4	100.0
	Total	54	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	29	53.7	53.7	53.7
	female	25	46.3	46.3	100.0
	Total	54	100.0	100.0	

etnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	African_Americna	28	51.9	51.9	51.9
	Caucasian	26	48.1	48.1	100.0
	Total	54	100.0	100.0	

2 year old removed

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender	53	100.0%	0	0.0%	53	100.0%
Age in years	53	100.0%	0	0.0%	53	100.0%
etnicity	53	100.0%	0	0.0%	53	100.0%

Descriptives

			Statistic	Std. Error
Gender	Mean		1.4528	.06903
	95% Confidence Interval for Mean	Lower Bound	1.3143	
		Upper Bound	1.5913	

	5% Trimmed Mean		1.4476	
	Median		1.0000	
	Variance		.253	
	Std. Deviation		.50253	
	Minimum		1.00	
	Maximum		2.00	
	Range		1.00	
	Interquartile Range		1.00	
	Skewness		.195	.327
	Kurtosis		-2.040	.644
Age in years	Mean		36.5472	.70328
	95% Confidence Interval for Mean	Lower Bound	35.1359	
		Upper Bound	37.9584	
	5% Trimmed Mean		36.5042	
	Median		35.0000	
	Variance		26.214	
	Std. Deviation		5.11997	
	Minimum		28.00	
	Maximum		45.00	
	Range		17.00	
	Interquartile Range		9.50	
	Skewness		.293	.327
	Kurtosis		-1.228	.644
etnicity	Mean		1.4906	.06933
	95% Confidence Interval for Mean	Lower Bound	1.3515	
		Upper Bound	1.6297	
	5% Trimmed Mean		1.4895	
	Median		1.0000	
	Variance		.255	
	Std. Deviation		.50469	
	Minimum		1.00	
	Maximum		2.00	
	Range		1.00	
	Interquartile Range		1.00	
	Skewness		.039	.327
	Kurtosis		-2.078	.644

Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	Gender	1.0000	1.0000	1.0000	1.0000	2.0000	2.0000	2.0000
	Age in years	29.7000	30.0000	32.0000	35.0000	41.5000	44.0000	45.0000
	etnicity	1.0000	1.0000	1.0000	1.0000	2.0000	2.0000	2.0000
Tukey's Hinges	Gender			1.0000	1.0000	2.0000		
	Age in years			32.0000	35.0000	41.0000		
	etnicity			1.0000	1.0000	2.0000		

Extreme Values

			Case Number	Value
Gender	Highest	1	6	2.00
		2	7	2.00
		3	8	2.00
		4	9	2.00
		5	10	2.00[a]
	Lowest	1	54	1.00
		2	52	1.00
		3	49	1.00
		4	48	1.00
		5	46	1.00[b]
Age in years	Highest	1	2	45.00
		2	19	45.00
		3	23	45.00
		4	45	45.00
		5	4	44.00[c]
	Lowest	1	43	28.00
		2	54	29.00
		3	52	30.00
		4	25	30.00

		5	22	30.00[d]
etnicity	Highest	1	1	2.00
		2	4	2.00
		3	5	2.00
		4	8	2.00
		5	10	2.00[a]
	Lowest	1	54	1.00
		2	53	1.00
		3	51	1.00
		4	49	1.00
		5	48	1.00[b]

a. Only a partial list of cases with the value 2.00 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 1.00 are shown in the table of lower extremes.

c. Only a partial list of cases with the value 44.00 are shown in the table of upper extremes.

d. Only a partial list of cases with the value 30.00 are shown in the table of lower extremes.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Gender	.363	53	.000	.634	53	.000
Age in years	.147	53	.006	.926	53	.003
etnicity	.344	53	.000	.637	53	.000

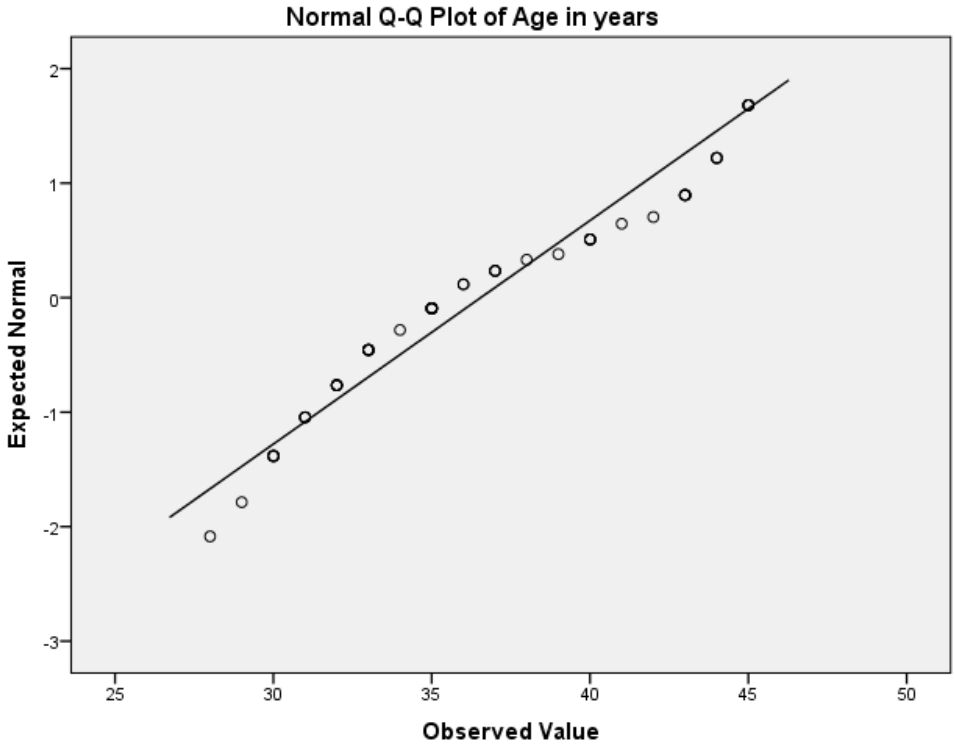
a. Lilliefors Significance Correction

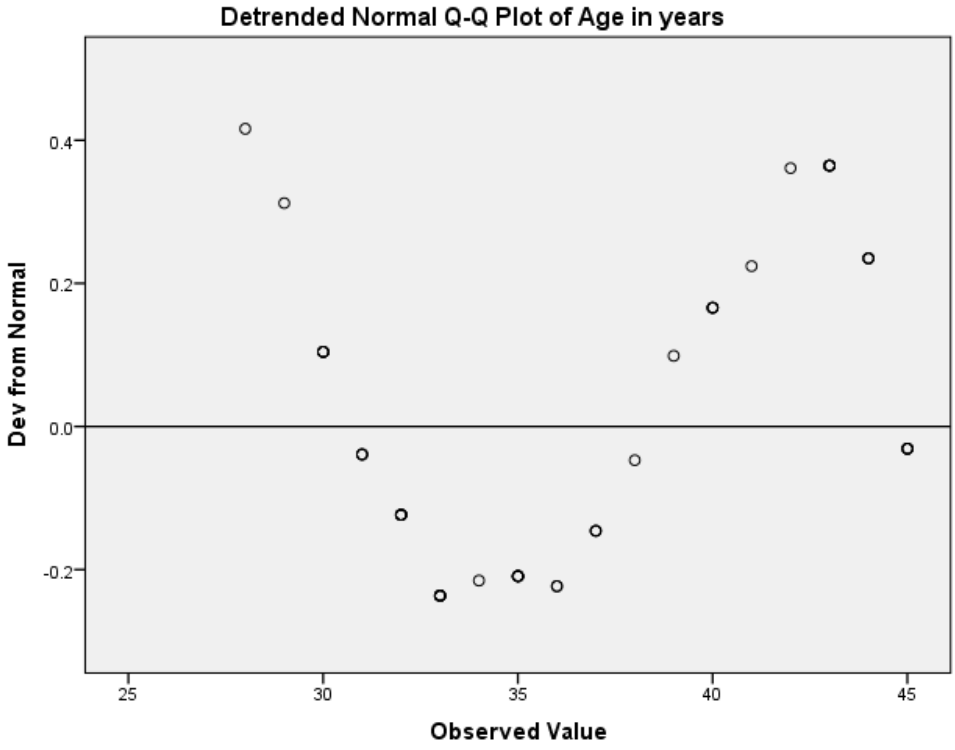
Age in years

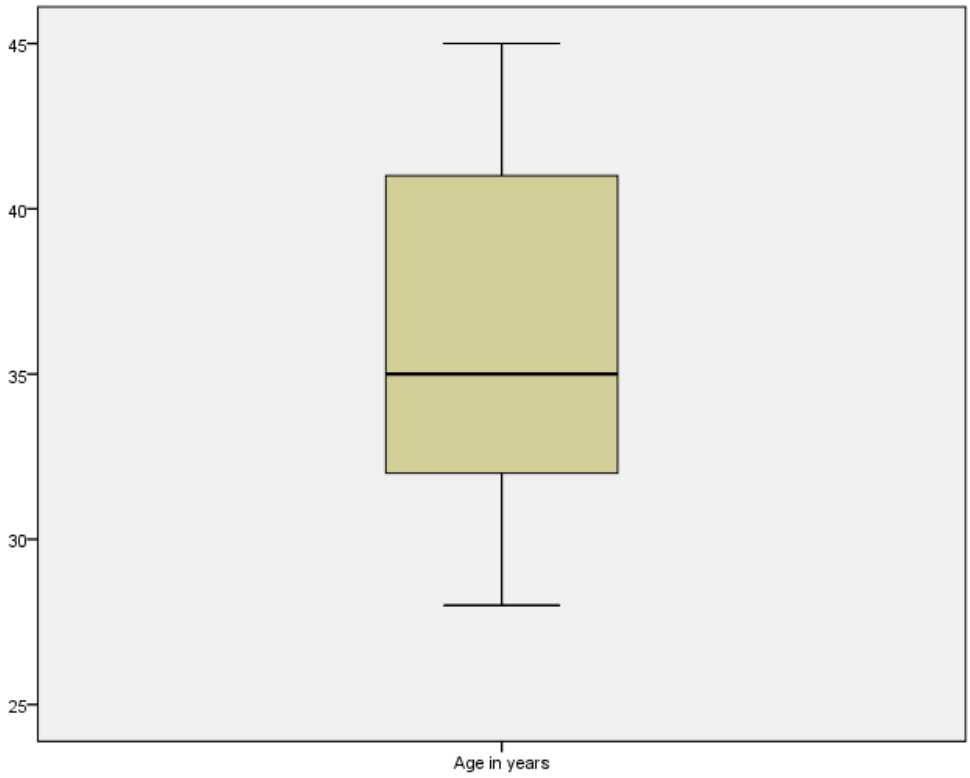
Age in years Stem-and-Leaf Plot

Frequency	Stem & Leaf
2.00	2 . 89
19.00	3 . 0000111222223333334
14.00	3 . 55555556677789
14.00	4 . 00001233333444
4.00	4 . 5555

Stem width: 10.00
Each leaf: 1 case(s)


Normal Q-Q Plot of Age in years
Expected Normal
Observed Value
2
1
0
-1
-2
-3
25
30
35
40
45
50


Detrended Normal Q-Q Plot of Age in years
Dev from Normal
0.4
0.2
0.0
-0.2
25
30
35
40
45
Observed Value



Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender	53	100.0%	0	0.0%	53	100.0%

Age in years	53	100.0%	0	0.0%	53	100.0%
etnicity	53	100.0%	0	0.0%	53	100.0%

Descriptives

			Statistic	Std. Error
Gender	Mean		1.4528	.06903
	95% Confidence Interval for Mean	Lower Bound	1.3143	
		Upper Bound	1.5913	
	5% Trimmed Mean		1.4476	
	Median		1.0000	
	Variance		.253	
	Std. Deviation		.50253	
	Minimum		1.00	
	Maximum		2.00	
	Range		1.00	
	Interquartile Range		1.00	
	Skewness		.195	.327
	Kurtosis		-2.040	.644
Age in years	Mean		36.5472	.70328
	95% Confidence Interval for Mean	Lower Bound	35.1359	
		Upper Bound	37.9584	
	5% Trimmed Mean		36.5042	
	Median		35.0000	
	Variance		26.214	
	Std. Deviation		5.11997	
	Minimum		28.00	
	Maximum		45.00	
	Range		17.00	
	Interquartile Range		9.50	
	Skewness		.293	.327
	Kurtosis		-1.228	.644
etnicity	Mean		1.4906	.06933
	95% Confidence Interval for Mean	Lower Bound	1.3515	
		Upper Bound	1.6297	
	5% Trimmed Mean		1.4895	

	Median	1.0000	
	Variance	.255	
	Std. Deviation	.50469	
	Minimum	1.00	
	Maximum	2.00	
	Range	1.00	
	Interquartile Range	1.00	
	Skewness	.039	.327
	Kurtosis	-2.078	.644

Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	Gender	1.0000	1.0000	1.0000	1.0000	2.0000	2.0000	2.0000
	Age in years	29.7000	30.0000	32.0000	35.0000	41.5000	44.0000	45.0000
	etnicity	1.0000	1.0000	1.0000	1.0000	2.0000	2.0000	2.0000
Tukey's Hinges	Gender			1.0000	1.0000	2.0000		
	Age in years			32.0000	35.0000	41.0000		
	etnicity			1.0000	1.0000	2.0000		

Extreme Values

			Case Number	Value
Gender	Highest	1	6	2.00
		2	7	2.00
		3	8	2.00
		4	9	2.00
		5	10	2.00[a]
	Lowest	1	54	1.00
		2	52	1.00
		3	49	1.00
		4	48	1.00

		5	46	1.00[b]
Age in years	Highest	1	2	45.00
		2	19	45.00
		3	23	45.00
		4	45	45.00
		5	4	44.00[c]
	Lowest	1	43	28.00
		2	54	29.00
		3	52	30.00
		4	25	30.00
		5	22	30.00[d]
etnicity	Highest	1	1	2.00
		2	4	2.00
		3	5	2.00
		4	8	2.00
		5	10	2.00[a]
	Lowest	1	54	1.00
		2	53	1.00
		3	51	1.00
		4	49	1.00
		5	48	1.00[b]

a. Only a partial list of cases with the value 2.00 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 1.00 are shown in the table of lower extremes.

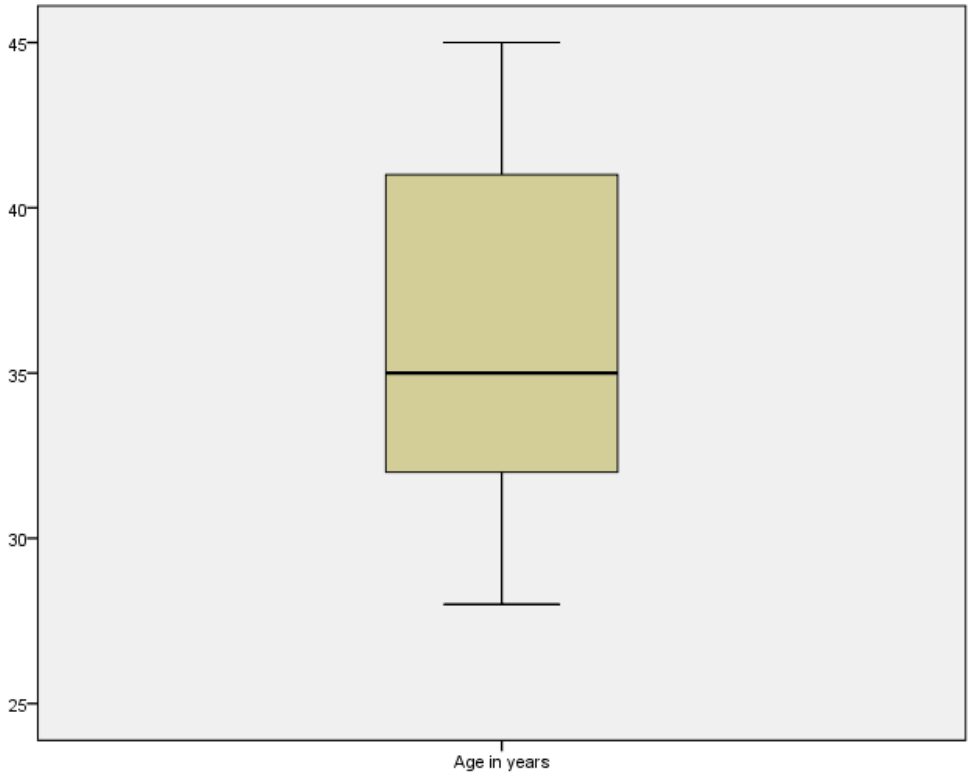
c. Only a partial list of cases with the value 44.00 are shown in the table of upper extremes.

d. Only a partial list of cases with the value 30.00 are shown in the table of lower extremes.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Gender	.363	53	.000	.634	53	.000
Age in years	.147	53	.006	.926	53	.003
etnicity	.344	53	.000	.637	53	.000

a. Lilliefors Significance Correction



Gender and Ethnicity

Frequency Table

etnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	African_Americna	27	50.9	50.9	50.9
	Caucasian	26	49.1	49.1	100.0
	Total	53	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	29	54.7	54.7	54.7
	female	24	45.3	45.3	100.0
	Total	53	100.0	100.0	

ANOVA Question 3

Explor

clinic where treatment took place

Case Processing Summary

	clinic where treatment took place	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
Satisfaction with treatment	clinic a	27	100.0%	0	0.0%	27	100.0%
	clinic b	26	100.0%	0	0.0%	26	100.0%

Descriptives

	clinic where treatment took place			Statistic	Std. Error
Satisfaction with treatment	clinic a	Mean		4.6296	.39996
		95% Confidence Interval for Mean	Lower Bound	3.8075	
			Upper Bound	5.4518	
		5% Trimmed Mean		4.6996	
		Median		5.0000	
		Variance		4.319	
		Std. Deviation		2.07824	

		Minimum		1.00	
		Maximum		7.00	
		Range		6.00	
		Interquartile Range		3.00	
		Skewness		-.518	.448
		Kurtosis		-1.070	.872
	clinic b	Mean		3.6538	.33715
		95% Confidence Interval for Mean	Lower Bound	2.9595	
			Upper Bound	4.3482	
		5% Trimmed Mean		3.6282	
		Median		3.5000	
		Variance		2.955	
		Std. Deviation		1.71912	
		Minimum		1.00	
		Maximum		7.00	
		Range		6.00	
		Interquartile Range		3.00	
		Skewness		.024	.456
		Kurtosis		-1.071	.887

Extreme Values

	clinic where treatment took place			Case Number	Value
Satisfaction with treatment	clinic a	Highest	1	15	7.00
			2	16	7.00
			3	43	7.00
			4	44	7.00
			5	45	7.00[a]
		Lowest	1	41	1.00
			2	14	1.00
			3	12	1.00
			4	39	2.00
			5	37	2.00[b]

	clinic b	Highest	1	47	7.00
			2	48	6.00
			3	49	6.00
			4	3	5.00
			5	4	5.00[c]
		Lowest	1	42	1.00
			2	28	1.00
			3	13	1.00
			4	38	2.00
			5	27	2.00[b]

a. Only a partial list of cases with the value 7.00 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 2.00 are shown in the table of lower extremes.

c. Only a partial list of cases with the value 5.00 are shown in the table of upper extremes.

Tests of Normality

	clinic where treatment took place	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Satisfaction with treatment	clinic a	.190	27	.014	.885	27	.006
	clinic b	.206	26	.006	.925	26	.060

a. Lilliefors Significance Correction

clinic where treatment took place = clinic a

Stem-and-Leaf Plots

Satisfaction with treatment Stem-and-Leaf Plot for
clinic= clinic a

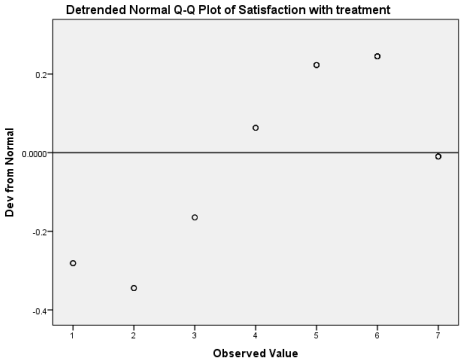
Frequency Stem & Leaf

3.00	1 . 000
3.00	2 . 000
2.00	3 . 00
3.00	4 . 000
4.00	5 . 0000
6.00	6 . 000000
6.00	7 . 000000

Stem width: 1.00
Each leaf: 1 case(s)

Normal Q-Q Plots

Detrended Normal Q-Q Plots



clinic where treatment took place = clinic b

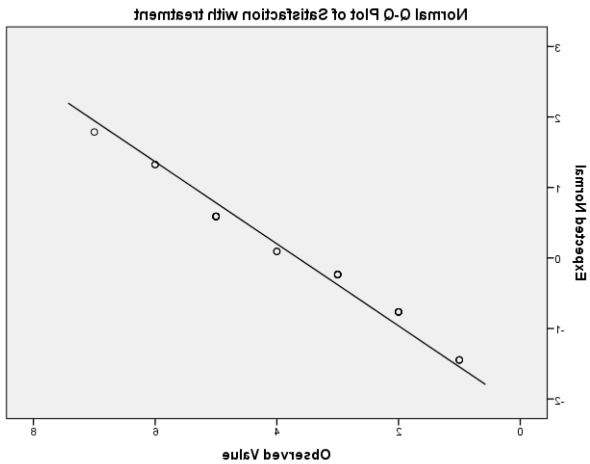
Stem-and-Leaf Plots

Satisfaction with treatment Stem-and-Leaf Plot for
clinic= clinic b

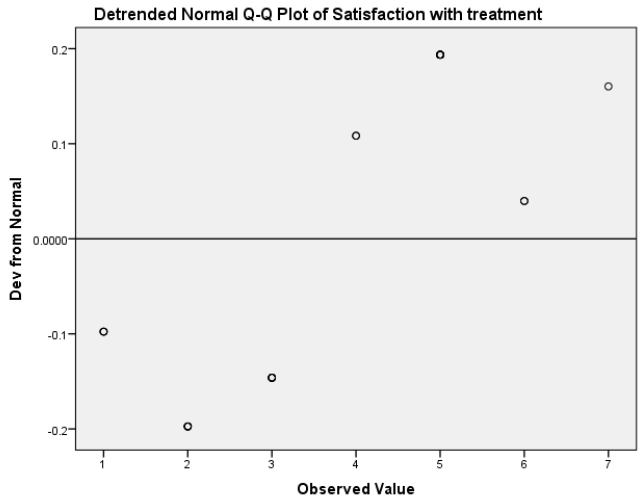
Frequency	Stem & Leaf
3.00	1 . 000
5.00	2 . 00000
5.00	3 . 00000
2.00	4 . 00
8.00	5 . 00000000
2.00	6 . 00
1.00	7 . 0

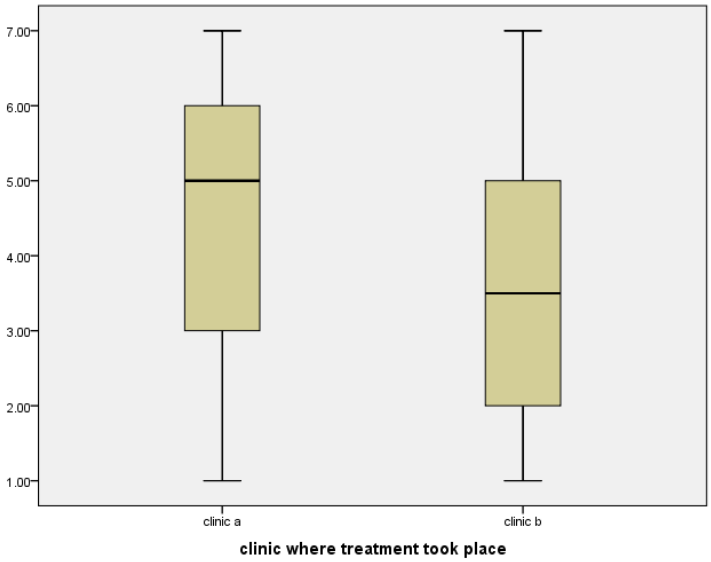
Stem width: 1.00
Each leaf: 1 case(s)

Normal Q-Q Plots



Detrended Normal Q-Q Plots






```
T-TEST GROUPS=clinic(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=txsat
  /CRITERIA=CI(.95).
```

T-Test

Group Statistics

	clinic where treatment took place	N	Mean	Std. Deviation	Std. Error Mean
Satisfaction with treatment	clinic a	27	4.6296	2.07824	.39996
	clinic b	26	3.6538	1.71912	.33715

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Satisfaction with treatment	Equal variances assumed	1.168	.285	1.859	51	.069	.97578	.52499	-.07818	2.02975
	Equal variances not assumed			1.865	49.883	.068	.97578	.52310	-.07496	2.02652

ANOVA 4.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Treatment	1.00	placebo	14
	2.00	hypnosis	14
	3.00	relaxation	13
	4.00	cogbehtherapy	12

Descriptive Statistics

Dependent Variable: Pounds lost

Treatment	Mean	Std. Deviation	N
placebo	6.5000	2.24465	14
hypnosis	9.2857	3.04905	14
relaxation	6.0000	2.04124	13
cogbehtherapy	14.0000	2.44949	12
Total	8.8113	3.93728	53

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Pounds lost

F	df1	df2	Sig.
1.465	3	49	.236

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + tx

Tests of Between-Subjects Effects

Dependent Variable: Pounds lost

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	503.756[a]	3	167.919	27.213	.000	.625	81.639	1.000
Intercept	4224.877	1	4224.877	684.684	.000	.933	684.684	1.000
tx	503.756	3	167.919	27.213	.000	.625	81.639	1.000
Error	302.357	49	6.171					
Total	4921.000	53						
Corrected Total	806.113	52						

a. R Squared = .625 (Adjusted R Squared = .602)

b. Computed using alpha = .05

Estimated Marginal Means

1. Treatment

Dependent Variable: Pounds lost

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
placebo	6.500	.664	5.166	7.834
hypnosis	9.286	.664	7.952	10.620

relaxation	6.000	.689	4.615	7.385
cogbehtherapy	14.000	.717	12.559	15.441

2. Grand Mean

Dependent Variable: Pounds lost

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
8.946	.342	8.259	9.634

Post Hoc Tests

Treatment

Multiple Comparisons

Dependent Variable: Pounds lost

	(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	placebo	hypnosis	-2.7857*	.93889	.023	-5.2826	-.2888
		relaxation	.5000	.95677	.953	-2.0445	3.0445
		cogbehtherapy	-7.5000*	.97722	.000	-10.0989	-4.9011
	hypnosis	placebo	2.7857*	.93889	.023	.2888	5.2826
		relaxation	3.2857*	.95677	.006	.7412	5.8302
		cogbehtherapy	-4.7143*	.97722	.000	-7.3132	-2.1154
	relaxation	placebo	-.5000	.95677	.953	-3.0445	2.0445
		hypnosis	-3.2857*	.95677	.006	-5.8302	-.7412
		cogbehtherapy	-8.0000*	.99442	.000	-10.6446	-5.3554
	cogbehtherapy	placebo	7.5000*	.97722	.000	4.9011	10.0989
		hypnosis	4.7143*	.97722	.000	2.1154	7.3132
		relaxation	8.0000*	.99442	.000	5.3554	10.6446
Games-Howell	placebo	hypnosis	-2.7857	1.01190	.051	-5.5781	.0066
		relaxation	.5000	.82487	.929	-1.7690	2.7690
		cogbehtherapy	-7.5000*	.92730	.000	-10.0694	-4.9306

	hypnosis	placebo	2.7857	1.01190	.051	-.0066	5.5781
		relaxation	3.2857*	.99225	.015	.5382	6.0332
		cogbehtherapy	-4.7143*	1.07891	.001	-7.6913	-1.7373
	relaxation	placebo	-.5000	.82487	.929	-2.7690	1.7690
		hypnosis	-3.2857*	.99225	.015	-6.0332	-.5382
		cogbehtherapy	-8.0000*	.90582	.000	-10.5198	-5.4802
	cogbehtherapy	placebo	7.5000*	.92730	.000	4.9306	10.0694
		hypnosis	4.7143*	1.07891	.001	1.7373	7.6913
		relaxation	8.0000*	.90582	.000	5.4802	10.5198

Based on observed means.

The error term is Mean Square(Error) = 6.171.

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Pounds lost

			Subset		
	Treatment	N	1	2	3
Tukey HSD[a,b,c]	relaxation	13	6.0000		
	placebo	14	6.5000		
	hypnosis	14		9.2857	
	cogbehtherapy	12			14.0000
	Sig.		.955	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 6.171.

a. Uses Harmonic Mean Sample Size = 13.196.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

c. Alpha = .05.

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Residual for LBSlost	53	100.0%	0	0.0%	53	100.0%

Descriptives

			Statistic	Std. Error
Residual for LBSlost	Mean		.0000	.33122
	95% Confidence Interval for Mean	Lower Bound	-.6646	
		Upper Bound	.6646	
	5% Trimmed Mean		-.0465	
	Median		-.5000	
	Variance		5.815	
	Std. Deviation		2.41134	
	Minimum		-4.00	
	Maximum		4.71	
	Range		8.71	
	Interquartile Range		4.00	
	Skewness		.289	.327
	Kurtosis		-.800	.644

Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	Residual for LBSlost	-3.6500	-3.2857	-2.0000	-.5000	2.0000	3.0000	4.7143
Tukey's Hinges	Residual for LBSlost			-2.0000	-.5000	2.0000		

Extreme Values

			Case Number	Value
Residual for LBSlost	Highest	1	15	4.71
		2	16	4.71

		3	17	4.71
		4	3	4.50
		5	29	3.00[a]
	Lowest	1	47	-4.00
		2	39	-4.00
		3	14	-3.50
		4	27	-3.29
		5	26	-3.29[b]

a. Only a partial list of cases with the value 3.00 are shown in the table of upper extremes.

b. Only a partial list of cases with the value -3.29 are shown in the table of lower extremes.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Residual for LBSlost	.104	53	.200*	.961	53	.081

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Stem-and-Leaf Plots

Residual for LBSlost Stem-and-Leaf Plot

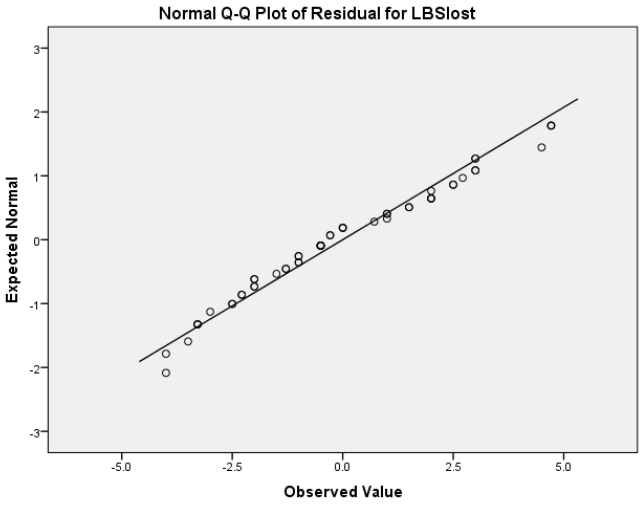
Frequency Stem & Leaf

1.00 -4 . 0
5.00 -3 . 02225
7.00 -2 . 0002255
5.00 -1 . 00225
9.00 -0 . 002255555
6.00 0 . 000007
5.00 1 . 00055
7.00 2 . 0000557

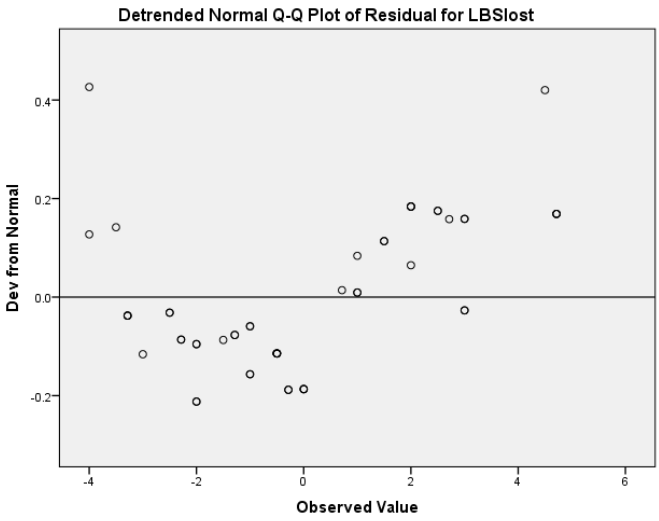
4.00	3 . 0000
4.00	4 . 5777

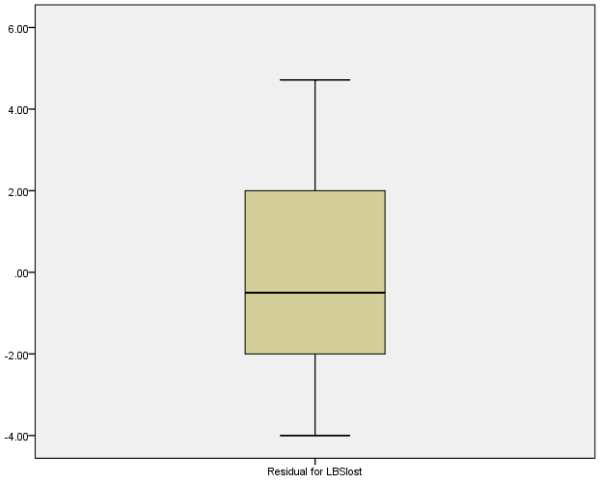
Stem width: 1.00
Each leaf: 1 case(s)

Normal Q-Q Plots



Detrended Normal Q-Q Plots





ANOVA 5.

Univariate Analysis of Variance

Between-Subjects Factors

	Value Label	N

Treatment	1.00	placebo	14
	2.00	hypnosis	14
	3.00	relaxation	13
	4.00	cogbehtherapy	12

Descriptive Statistics

Dependent Variable: Posttreatment eating control scores (1-20)

Treatment	Mean	Std. Deviation	N
placebo	6.7143	2.99817	14
hypnosis	9.2143	3.26234	14
relaxation	7.0000	2.48328	13
cogbehtherapy	12.1667	2.03753	12
Total	8.6792	3.44056	53

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Posttreatment eating control scores (1-20)

F	df1	df2	Sig.
.922	3	49	.437

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + tx

Tests of Between-Subjects Effects

Dependent Variable: Posttreatment eating control scores (1-20)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	240.666[a]	3	80.222	10.486	.000	.391	31.457	.998
Intercept	4063.414	1	4063.414	531.121	.000	.916	531.121	1.000
tx	240.666	3	80.222	10.486	.000	.391	31.457	.998
Error	374.881	49	7.651					
Total	4608.000	53						
Corrected Total	615.547	52						

a. R Squared = .391 (Adjusted R Squared = .354)

b. Computed using alpha = .05

Estimated Marginal Means

1. Treatment

Dependent Variable: Posttreatment eating control scores (1-20)

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
placebo	6.714	.739	5.229	8.200
hypnosis	9.214	.739	7.729	10.700
relaxation	7.000	.767	5.458	8.542
cogbehtherapy	12.167	.798	10.562	13.771

2. Grand Mean

Dependent Variable: Posttreatment eating control scores (1-20)

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
8.774	.381	8.009	9.539

Post Hoc Tests

Treatment

Multiple Comparisons

Dependent Variable: Posttreatment eating control scores (1-20)

	(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	placebo	hypnosis	-2.5000	1.04544	.092	-5.2803	.2803
		relaxation	-.2857	1.06536	.993	-3.1190	2.5475
		cogbehtherapy	-5.4524*	1.08813	.000	-8.3462	-2.5586
	hypnosis	placebo	2.5000	1.04544	.092	-.2803	5.2803
		relaxation	2.2143	1.06536	.174	-.6190	5.0475
		cogbehtherapy	-2.9524*	1.08813	.044	-5.8462	-.0586
	relaxation	placebo	.2857	1.06536	.993	-2.5475	3.1190
		hypnosis	-2.2143	1.06536	.174	-5.0475	.6190

		cogbehtherapy	-5.1667*	1.10728	.000	-8.1114	-2.2219
	cogbehtherapy	placebo	5.4524*	1.08813	.000	2.5586	8.3462
		hypnosis	2.9524*	1.08813	.044	.0586	5.8462
		relaxation	5.1667*	1.10728	.000	2.2219	8.1114
Games-Howell	placebo	hypnosis	-2.5000	1.18418	.176	-5.7501	.7501
		relaxation	-.2857	1.05661	.993	-3.1945	2.6231
		cogbehtherapy	-5.4524*	.99400	.000	-8.2038	-2.7010
	hypnosis	placebo	2.5000	1.18418	.176	-.7501	5.7501
		relaxation	2.2143	1.11111	.218	-.8498	5.2784
		cogbehtherapy	-2.9524*	1.05174	.047	-5.8717	-.0330
	relaxation	placebo	.2857	1.05661	.993	-2.6231	3.1945
		hypnosis	-2.2143	1.11111	.218	-5.2784	.8498
		cogbehtherapy	-5.1667*	.90571	.000	-7.6755	-2.6579
	cogbehtherapy	placebo	5.4524*	.99400	.000	2.7010	8.2038
		hypnosis	2.9524*	1.05174	.047	.0330	5.8717
		relaxation	5.1667*	.90571	.000	2.6579	7.6755

Based on observed means.

The error term is Mean Square(Error) = 7.651.

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Posttreatment eating control scores (1-20)

			Subset	
	Treatment	N	1	2
Tukey HSD[a,b,c]	placebo	14	6.7143	
	relaxation	13	7.0000	
	hypnosis	14	9.2143	
	cogbehtherapy	12		12.1667
	Sig.		.107	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 7.651.

a. Uses Harmonic Mean Sample Size = 13.196.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

c. Alpha = .05.

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Residual for EAtCon	53	100.0%	0	0.0%	53	100.0%

Descriptives

			Statistic	Std. Error
Residual for EAtCon	Mean		.0000	.36881
	95% Confidence Interval for Mean	Lower Bound	-.7401	
		Upper Bound	.7401	
	5% Trimmed Mean		-.0672	
	Median		-.1667	
	Variance		7.209	
	Std. Deviation		2.68500	
	Minimum		-6.00	
	Maximum		6.29	
	Range		12.29	
	Interquartile Range		3.92	
	Skewness		.348	.327
	Kurtosis		.025	.644

Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	Residual for EAtCon	-3.8643	-3.5143	-2.0833	-.1667	1.8333	3.0000	5.7857
Tukey's Hinges	Residual for EAtCon			-2.0000	-.1667	1.8333		

Extreme Values

			Case Number	Value
Residual for EAtCon	Highest	1	1	6.29
		2	15	5.79
		3	19	5.79
		4	3	5.29
		5	29	3.00[a]
	Lowest	1	39	-6.00
		2	24	-4.21
		3	14	-3.71
		4	13	-3.71
		5	12	-3.71

a. Only a partial list of cases with the value 3.00 are shown in the table of upper extremes.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Residual for EAtCon	.061	53	.200*	.978	53	.428

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Stem-and-Leaf Plots

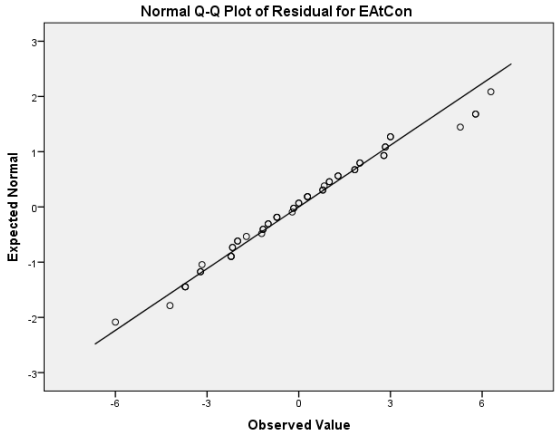
Residual for EAtCon Stem-and-Leaf Plot

Frequency Stem & Leaf

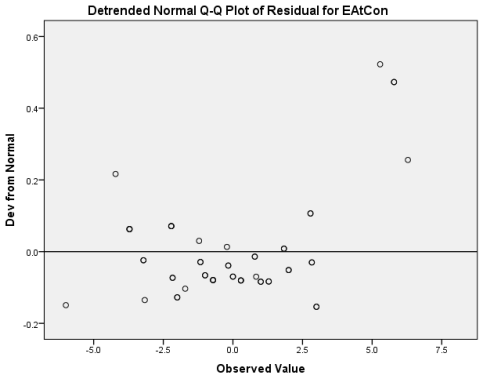
1.00 -0 . 6
1.00 -0 . 4
13.00 -0 . 2222222333333
12.00 -0 . 000000111111
14.00 0 . 00000000111111
8.00 0 . 22222233
3.00 0 . 555
1.00 0 . 6

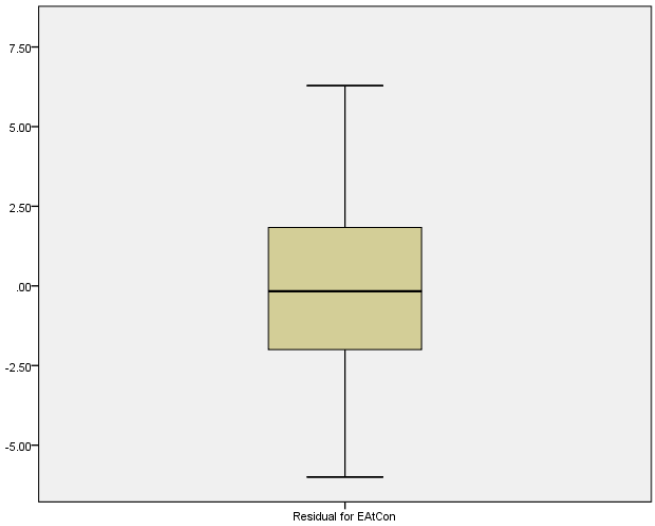
Stem width: 10.00
Each leaf: 1 case(s)

Normal Q-Q Plots



Detrended Normal Q-Q Plots





Chi-square 1.

NPar Tests

Chi-Square Test

Frequencies

math

	Observed N	Expected N	Residual
mostly A's	44	6.1	37.9
A and B's	7	12.3	-5.3
mostly B's	26	14.8	11.2
B's and C's	18	18.5	-.4
mostly C's	15	19.7	-4.7
C's and D's	8	18.5	-10.5
mostly D's	1	14.8	-13.8
D's and F's	3	12.3	-9.3
Mostly F's	1	6.1	-5.1
Total	123		

Test Statistics

	math
Chi-Square	275.005[a]
df	8
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 6.1.

Descriptives

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
math	123	8	1	9	3.02	.175	1.942	3.770	.714	.218	-.045	.433
Valid N (listwise)	123											

Chi-square 1

NPar Tests

Chi-Square Test

Frequencies

math

	Observed N	Expected N	Residual
mostly A's	44	6.1	37.9
A and B's	7	12.3	-5.3
mostly B's	26	14.8	11.2
B's and C's	18	18.5	-.4
mostly C's	15	19.7	-4.7
C's and D's	8	18.5	-10.5
mostly D's	1	14.8	-13.8
D's and F's	3	12.3	-9.3

Mostly F's	1	6.1	-5.1
Total	123		

Test Statistics

	math
Chi-Square	275.005[a]
df	8
Asymp. Sig.	.000

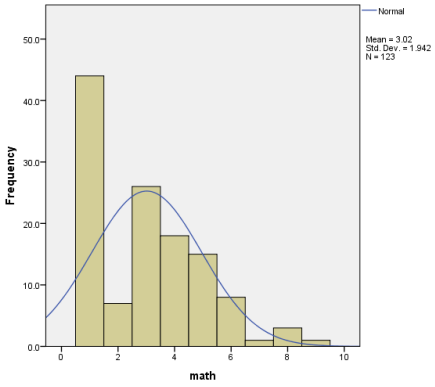
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 6.1.

Descriptives

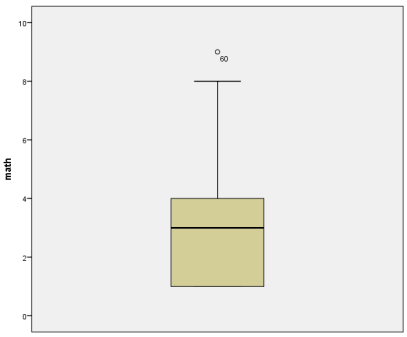
Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
math	123	8	1	9	3.02	.175	1.942	3.770	.714	.218	-.045	.433
Valid N (listwise)	123											

GGraph



GGraph



Chi-Square 2

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
gpa * grade	121	98.4%	2	1.6%	123	100.0%

gpa * grade Crosstabulation

			grade		
			9th grade	10th grade	Total
gpa	1.5-1.0	Count	2	3	5
		Expected Count	2.6	2.4	5.0
		% within grade	3.2%	5.2%	4.1%
		Standardized Residual	-.4	.4	
	2.0-2.4	Count	7	4	11
		Expected Count	5.7	5.3	11.0
		% within grade	11.1%	6.9%	9.1%
		Standardized Residual	.5	-.6	
	2.5-2.9	Count	7	14	21
		Expected Count	10.9	10.1	21.0
		% within grade	11.1%	24.1%	17.4%
		Standardized Residual	-1.2	1.2	
	3.0-3.4	Count	12	16	28
		Expected Count	14.6	13.4	28.0
		% within grade	19.0%	27.6%	23.1%
		Standardized Residual	-.7	.7	
	3.5-3.9	Count	19	17	36
		Expected Count	18.7	17.3	36.0
		% within grade	30.2%	29.3%	29.8%
		Standardized Residual	.1	-.1	
	4.0	Count	16	4	20
		Expected Count	10.4	9.6	20.0
		% within grade	25.4%	6.9%	16.5%
		Standardized Residual	1.7	-1.8	
Total		Count	63	58	121
		Expected Count	63.0	58.0	121.0
		% within grade	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.046[a]	5	.050
Likelihood Ratio	11.596	5	.041
Linear-by-Linear Association	3.808	1	.051
N of Valid Cases	121		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is 2.40.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.302	.050
	Cramer's V	.302	.050
	Contingency Coefficient	.289	.050
N of Valid Cases		121	

Correlation

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
self-efficacy	120	100.0%	0	0.0%	120	100.0%

Descriptives

			Statistic	Std. Error
self-efficacy	Mean		3.7879	.07649
	95% Confidence Interval for Mean	Lower Bound	3.6365	
		Upper Bound	3.9394	

	5% Trimmed Mean	3.8125	
	Median	3.8000	
	Variance	.702	
	Std. Deviation	.83789	
	Minimum	2.00	
	Maximum	5.00	
	Range	3.00	
	Interquartile Range	1.15	
	Skewness	-.266	.221
	Kurtosis	-.715	.438

Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	self-efficacy	2.2000	2.4200	3.2500	3.8000	4.4000	5.0000	5.0000
Tukey's Hinges	self-efficacy			3.3000	3.8000	4.4000		

Extreme Values

			Case Number	Value
self-efficacy	Highest	1	3	5.00
		2	19	5.00
		3	20	5.00
		4	27	5.00
		5	30	5.00[a]
	Lowest	1	53	2.00
		2	29	2.00
		3	111	2.20
		4	110	2.20
		5	50	2.20[b]

a. Only a partial list of cases with the value 5.00 are shown in the table of upper extremes.

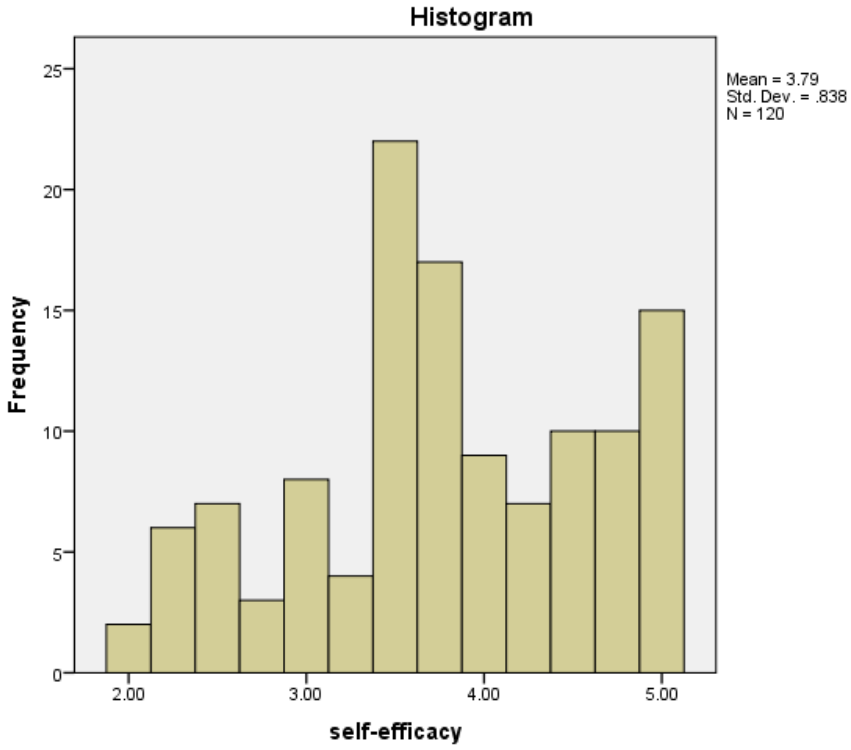
b. Only a partial list of cases with the value 2.20 are shown in the table of lower extremes.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
self-efficacy	.095	120	.010	.951	120	.000

a. Lilliefors Significance Correction

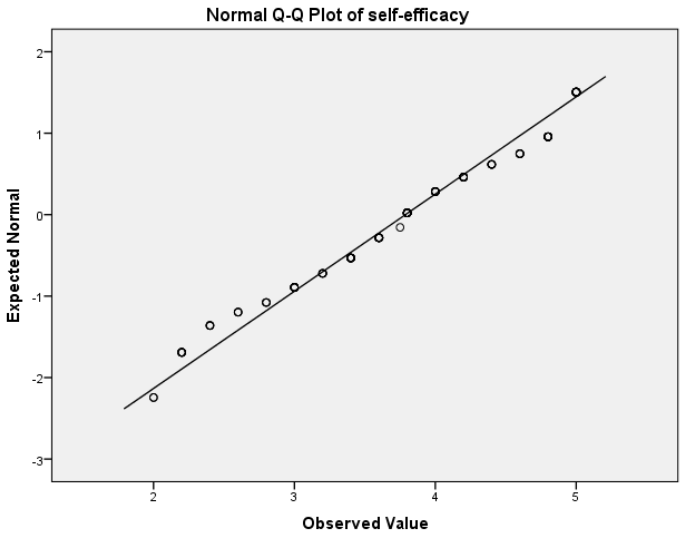
self-efficacy

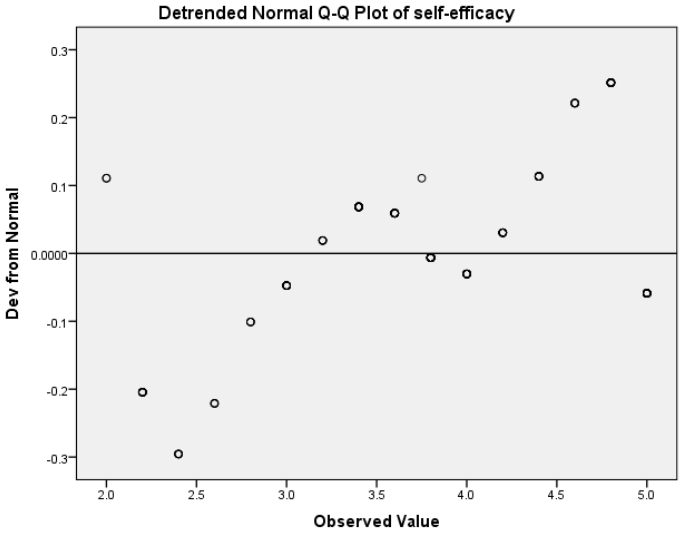


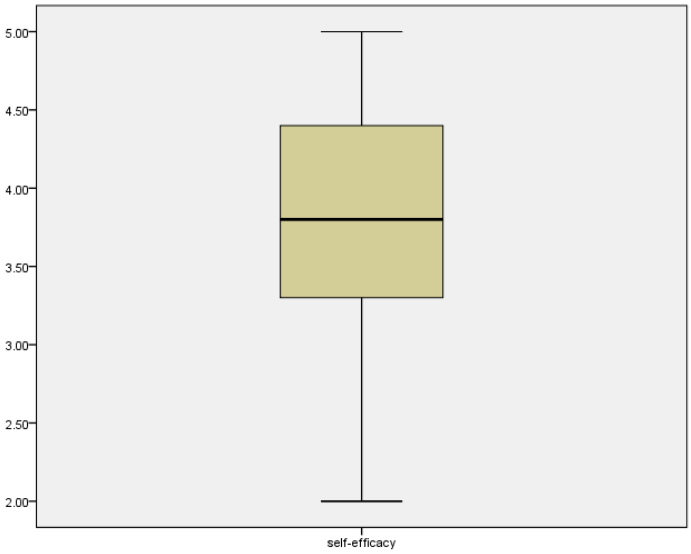
self-efficacy Stem-and-Leaf Plot

Frequency	Stem & Leaf
2.00	2 . 00
6.00	2 . 222222
4.00	2 . 4444
3.00	2 . 666
3.00	2 . 888
8.00	3 . 00000000
4.00	3 . 2222
11.00	3 . 44444444444
12.00	3 . 666666666667
16.00	3 . 8888888888888888
9.00	4 . 000000000
7.00	4 . 2222222
6.00	4 . 444444
4.00	4 . 6666
10.00	4 . 8888888888
15.00	5 . 000000000000000

Stem width: 1.00
Each leaf: 1 case(s)







Explore

Case Processing Summary

	Cases

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
focus on learning rather than grade	120	100.0%	0	0.0%	120	100.0%

Descriptives

			Statistic	Std. Error
focus on learning rather than grade	Mean		3.7663	.07621
	95% Confidence Interval for Mean	Lower Bound	3.6154	
		Upper Bound	3.9172	
	5% Trimmed Mean		3.7954	
	Median		3.8000	
	Variance		.697	
	Std. Deviation		.83481	
	Minimum		1.40	
	Maximum		5.00	
	Range		3.60	
	Interquartile Range		1.20	
	Skewness		-.261	.221
	Kurtosis		-.478	.438

Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	focus on learning rather than grade	2.4000	2.6200	3.2000	3.8000	4.4000	5.0000	5.0000
Tukey's Hinges	focus on learning rather than grade			3.2000	3.8000	4.4000		

Extreme Values

			Case Number	Value
focus on learning rather than grade	Highest	1	3	5.00

grade		2	9	5.00
		3	15	5.00
		4	19	5.00
		5	32	5.00[a]
	Lowest	1	25	1.40
		2	111	1.86
		3	56	2.00
		4	50	2.00
		5	96	2.40[b]

a. Only a partial list of cases with the value 5.00 are shown in the table of upper extremes.

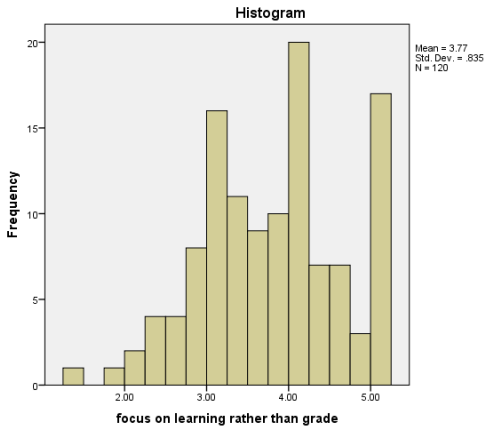
b. Only a partial list of cases with the value 2.40 are shown in the table of lower extremes.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
focus on learning rather than grade	.072	120	.193	.963	120	.002

a. Lilliefors Significance Correction

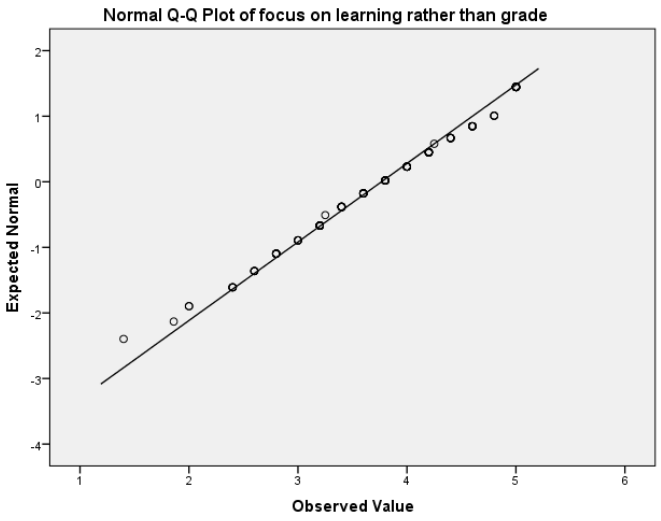
focus on learning rather than grade

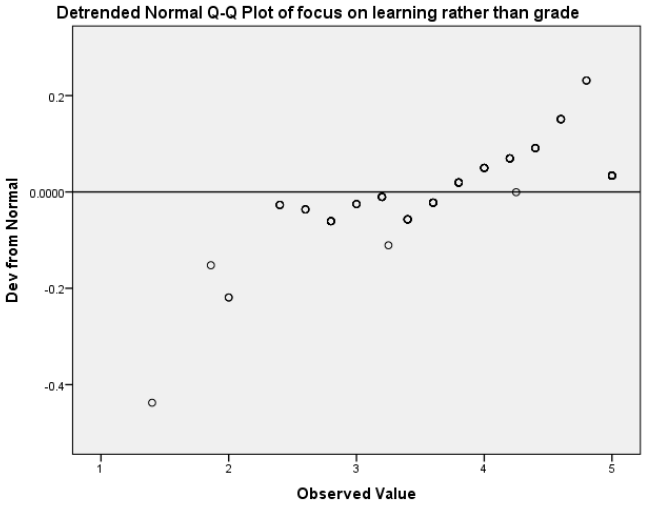


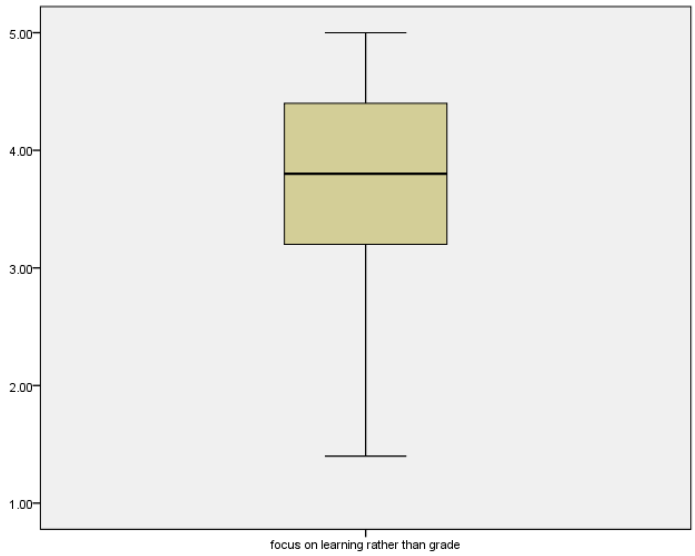
focus on learning rather than grade Stem-and-Leaf Plot

Frequency	Stem & Leaf
1.00	1 . 4
1.00	1 . 8
6.00	2 . 004444
12.00	2 . 666688888888
27.00	3 . 000022222222222224444444444
19.00	3 . 6666666668888888888
27.00	4 . 000000000022222222222444444
10.00	4 . 6666666888
17.00	5 . 00000000000000000

Stem width: 1.00
Each leaf: 1 case(s)


Normal Q-Q Plot of focus on learning rather than grade
Expected Normal
Observed Value
2
1
0
-1
-2
-3
-4
1
2
3
4
5
6


Detrended Normal Q-Q Plot of focus on learning rather than grade
Dev from Normal
Observed Value
0.2
0.0000
-0.2
-0.4
1
2
3
4
5



Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
focus on demonstrating ability, getting the grade	120	100.0%	0	0.0%	120	100.0%

Descriptives

			Statistic	Std. Error
focus on demonstrating ability, getting the grade	Mean		2.4092	.09451
	95% Confidence Interval for Mean	Lower Bound	2.2220	
		Upper Bound	2.5963	
	5% Trimmed Mean		2.3556	
	Median		2.4000	
	Variance		1.072	
	Std. Deviation		1.03534	
	Minimum		1.00	

	Maximum	5.00	
	Range	4.00	
	Interquartile Range	1.40	
	Skewness	.578	.221
	Kurtosis	-.319	.438

Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	focus on demonstrating ability, getting the grade	1.0000	1.0000	1.6000	2.4000	3.0000	3.9800	4.4850
Tukey's Hinges	focus on demonstrating ability, getting the grade			1.6000	2.4000	3.0000		

Extreme Values

			Case Number	Value
focus on demonstrating ability, getting the grade	Highest	1	51	5.00
		2	108	5.00
		3	115	5.00
		4	11	4.60
		5	37	4.60
	Lowest	1	122	1.00
		2	112	1.00
		3	103	1.00
		4	94	1.00
		5	89	1.00[a]

a. Only a partial list of cases with the value 1.00 are shown in the table of lower extremes.

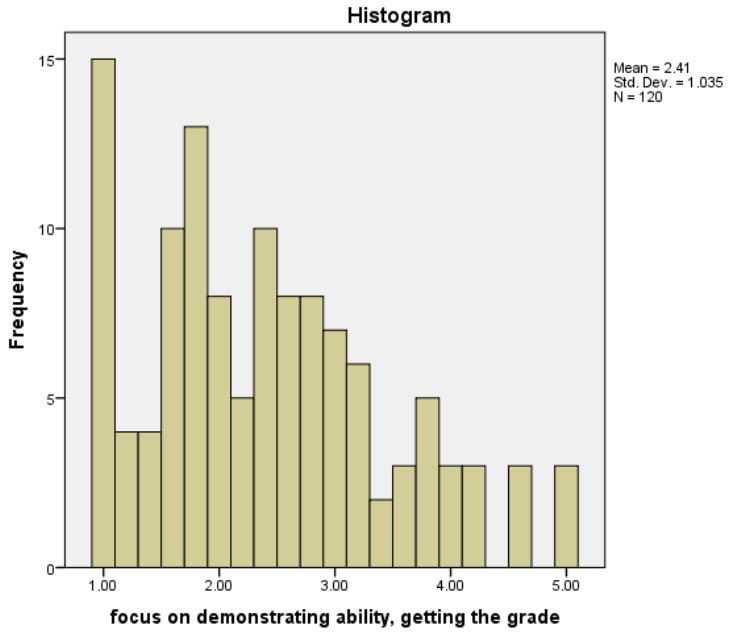
Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.

focus on demonstrating ability, getting the grade	.105	120	.002	.948	120	.000

a. Lilliefors Significance Correction

focus on demonstrating ability, getting the grade

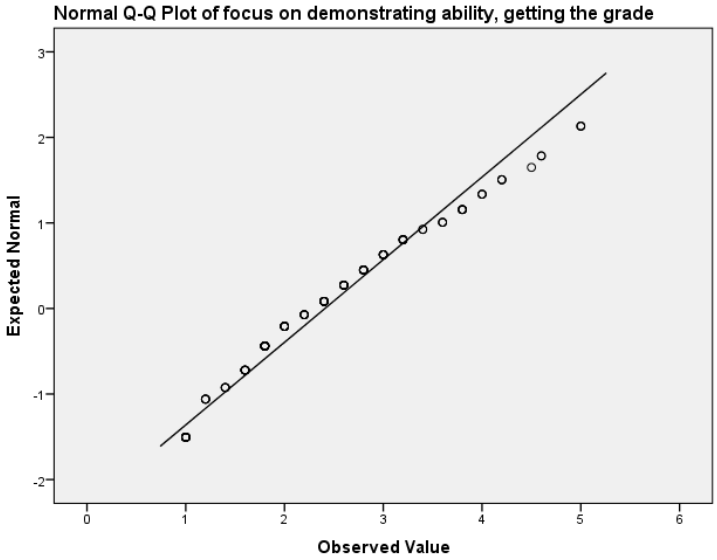


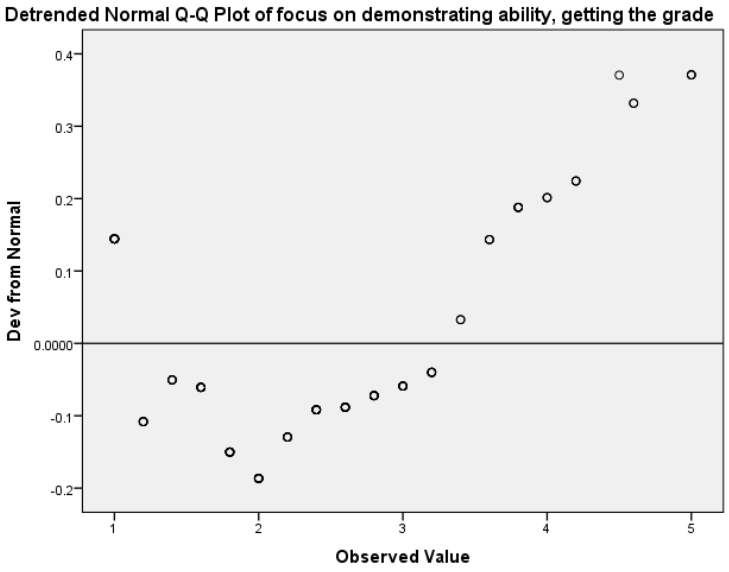
focus on demonstrating ability, getting the grade Stem-and-Leaf Plot

Frequency	Stem & Leaf
23.00	1 . 00000000000000022224444
23.00	1 . 66666666668888888888888
23.00	2 . 00000000222224444444444
16.00	2 . 6666666688888888
15.00	3 . 000000022222244

8.00	3 .	66688888
6.00	4 .	000222
3.00	4 .	566
3.00	5 .	000

Stem width: 1.00
Each leaf: 1 case(s)




Detrended Normal Q-Q Plot of focus on demonstrating ability, getting the grade
Dev from Normal
0.4
0.3
0.2
0.1
0.0000
-0.1
-0.2
1
2
3
4
5
Observed Value


5.00
4.00
3.00
2.00
1.00
focus on demonstrating ability, getting the grade

1.

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
self-efficacy	3.7879	.83789	120
focus on learning rather than grade	3.7663	.83481	120
focus on demonstrating ability, getting the grade	2.4092	1.03534	120

Correlations

		self-efficacy	focus on learning rather than grade	focus on demonstrating ability, getting the grade
self-efficacy	Pearson Correlation	1	.539**	.167
	Sig. (2-tailed)		.000	.069
	N	120	120	120
focus on learning rather than grade	Pearson Correlation	.539**	1	.294**
	Sig. (2-tailed)	.000		.001
	N	120	120	120
focus on demonstrating ability, getting the grade	Pearson Correlation	.167	.294**	1
	Sig. (2-tailed)	.069	.001	
	N	120	120	120

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

Nonparametric Correlations

Correlations

	self-efficacy	focus on learning rather than grade	focus on demonstrating ability, getting the grade

Spearman's rho	self-efficacy	Correlation Coefficient	1.000	.531**	.126
		Sig. (2-tailed)	.	.000	.169
		N	120	120	120
	focus on learning rather than grade	Correlation Coefficient	.531**	1.000	.283**
		Sig. (2-tailed)	.000	.	.002
		N	120	120	120
	focus on demonstrating ability, getting the grade	Correlation Coefficient	.126	.283**	1.000
		Sig. (2-tailed)	.169	.002	.
		N	120	120	120

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

Correlation 1a

Report

Sum
Grand Total
44.90

Correlation 1b.

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
focus on demonstrating ability, getting the grade	120	100.0%	0	0.0%	120	100.0%

Descriptives

			Statistic	Std. Error
focus on demonstrating ability, getting the grade	Mean		2.4092	.09451
	95% Confidence Interval for Mean	Lower Bound	2.2220	
		Upper Bound	2.5963	
	5% Trimmed Mean		2.3556	
	Median		2.4000	
	Variance		1.072	
	Std. Deviation		1.03534	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		1.40	
	Skewness		.578	.221
	Kurtosis		-.319	.438

Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	focus on demonstrating ability, getting the grade	1.0000	1.0000	1.6000	2.4000	3.0000	3.9800	4.4850
Tukey's Hinges	focus on demonstrating ability, getting the grade			1.6000	2.4000	3.0000		

Extreme Values

			Case Number	Value
focus on demonstrating ability, getting the grade	Highest	1	51	5.00
		2	108	5.00
		3	115	5.00
		4	11	4.60
		5	37	4.60
	Lowest	1	122	1.00

	2	112	1.00
	3	103	1.00
	4	94	1.00
	5	89	1.00[a]

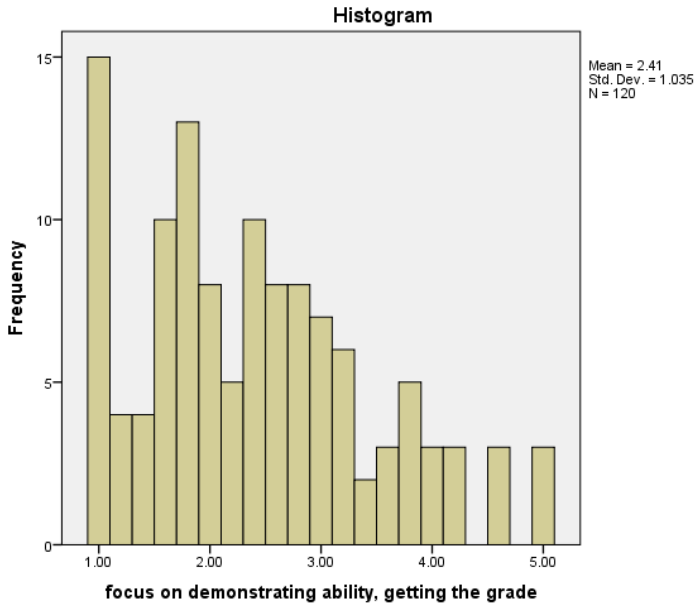
a. Only a partial list of cases with the value 1.00 are shown in the table of lower extremes.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
focus on demonstrating ability, getting the grade	.105	120	.002	.948	120	.000

a. Lilliefors Significance Correction

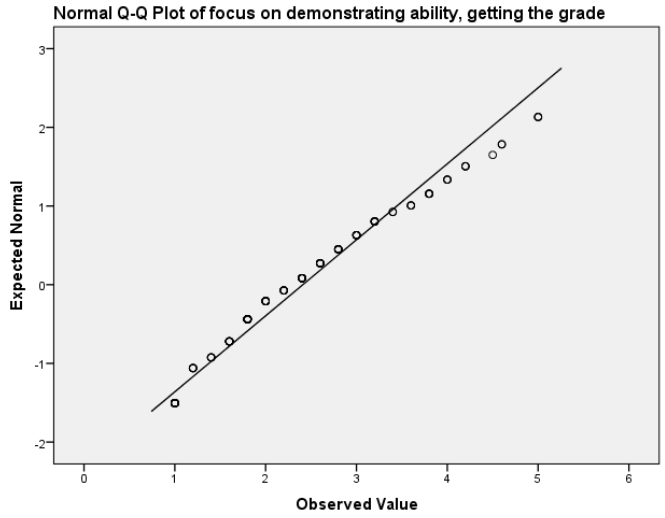
focus on demonstrating ability, getting the grade

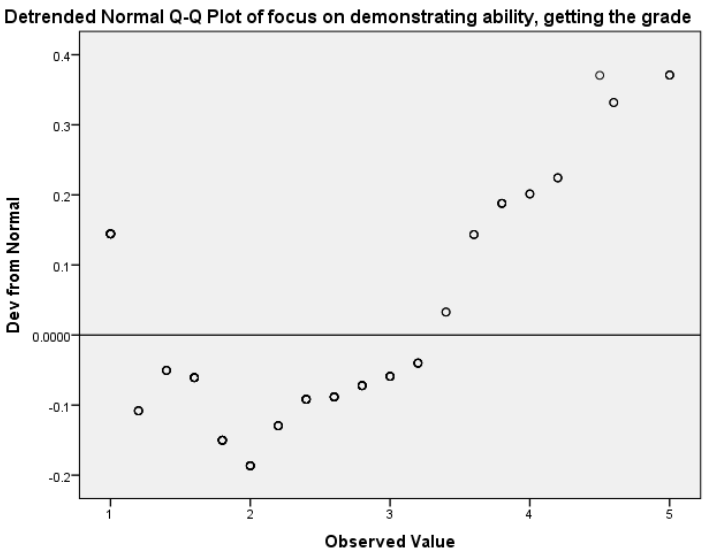


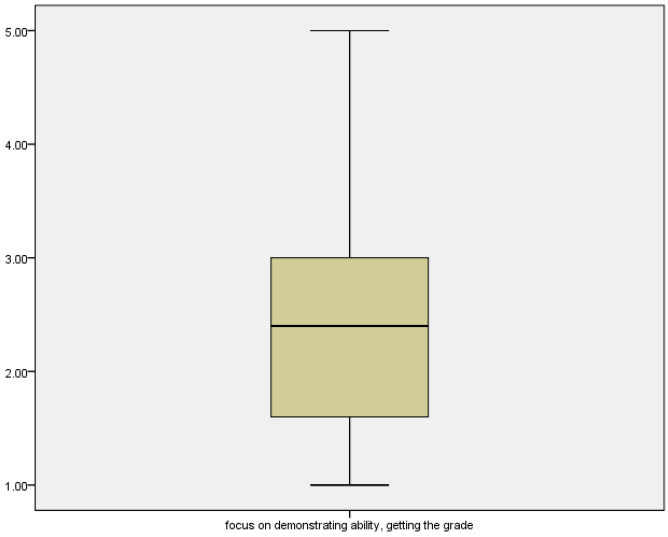
focus on demonstrating ability, getting the grade Stem-and-Leaf Plot

Frequency	Stem &	Leaf
23.00	1 .	00000000000000022224444
23.00	1 .	66666666668888888888888
23.00	2 .	00000000222224444444444
16.00	2 .	6666666688888888
15.00	3 .	000000022222244
8.00	3 .	66688888
6.00	4 .	000222
3.00	4 .	566
3.00	5 .	000

Stem width: 1.00
Each leaf: 1 case(s)




Detrended Normal Q-Q Plot of focus on demonstrating ability, getting the grade
Dev from Normal
0.4
0.3
0.2
0.1
0.0000
-0.1
-0.2
1
2
3
4
5
Observed Value


5.00
4.00
3.00
2.00
1.00
focus on demonstrating ability, getting the grade

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
self-efficacy	3.7879	.83789	120
focus on learning rather than grade	3.7663	.83481	120
focus on demonstrating ability, getting the grade	2.4092	1.03534	120

Correlations

		self-efficacy	focus on learning rather than grade	focus on demonstrating ability, getting the grade
self-efficacy	Pearson Correlation	1	.539**	.167
	Sig. (2-tailed)		.000	.069
	N	120	120	120
focus on learning rather than grade	Pearson Correlation	.539**	1	.294**
	Sig. (2-tailed)	.000		.001
	N	120	120	120
focus on demonstrating ability, getting the grade	Pearson Correlation	.167	.294**	1
	Sig. (2-tailed)	.069	.001	
	N	120	120	120

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

Nonparametric Correlations

Correlations

			self-efficacy	focus on learning rather than grade	focus on demonstrating ability, getting the grade
Spearman's rho	self-efficacy	Correlation Coefficient	1.000	.531**	.126

		Sig. (2-tailed)	.	.000	.169
		N	120	120	120
	focus on learning rather than grade	Correlation Coefficient	.531**	1.000	.283**
		Sig. (2-tailed)	.000	.	.002
		N	120	120	120
	focus on demonstrating ability, getting the grade	Correlation Coefficient	.126	.283**	1.000
		Sig. (2-tailed)	.169	.002	.
		N	120	120	120

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

Correlations

gender = male

Descriptive Statistics[a]

	Mean	Std. Deviation	N
self-efficacy	3.8816	1.03434	49
focus on learning rather than grade	3.6584	.92489	49
focus on demonstrating ability, getting the grade	2.3878	.92323	49

a. gender = male

Correlations[a]

		self-efficacy	focus on learning rather than grade	focus on demonstrating ability, getting the grade
self-efficacy	Pearson Correlation	1	.619**	.139
	Sig. (2-tailed)		.000	.341
	N	49	49	49
focus on learning rather than grade	Pearson Correlation	.619**	1	.208
	Sig. (2-tailed)	.000		.151
	N	49	49	49
focus on demonstrating	Pearson Correlation	.139	.208	1

ability, getting the grade	Sig. (2-tailed)	.341	.151	
	N	49	49	49

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

a. gender = male

gender = female

Descriptive Statistics[a]

	Mean	Std. Deviation	N
self-efficacy	3.7232	.67044	71
focus on learning rather than grade	3.8408	.76445	71
focus on demonstrating ability, getting the grade	2.4239	1.11233	71

a. gender = female

Correlations[a]

		self-efficacy	focus on learning rather than grade	focus on demonstrating ability, getting the grade
self-efficacy	Pearson Correlation	1	.482**	.211
	Sig. (2-tailed)		.000	.078
	N	71	71	71
focus on learning rather than grade	Pearson Correlation	.482**	1	.361**
	Sig. (2-tailed)	.000		.002
	N	71	71	71
focus on demonstrating ability, getting the grade	Pearson Correlation	.211	.361**	1
	Sig. (2-tailed)	.078	.002	
	N	71	71	71

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

a. gender = female

Nonparametric Correlations

gender = male

Correlations[a]

			self-efficacy	focus on learning rather than grade	focus on demonstrating ability, getting the grade
Spearman's rho	self-efficacy	Correlation Coefficient	1.000	.637**	.116
		Sig. (2-tailed)	.	.000	.427
		N	49	49	49
	focus on learning rather than grade	Correlation Coefficient	.637**	1.000	.229
		Sig. (2-tailed)	.000	.	.113
		N	49	49	49
	focus on demonstrating ability, getting the grade	Correlation Coefficient	.116	.229	1.000
		Sig. (2-tailed)	.427	.113	.
		N	49	49	49

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

a. gender = male

gender = female

Correlations[a]

	self-efficacy	focus on learning rather than grade	focus on demonstrating ability, getting the grade

Spearman's rho	self-efficacy	Correlation Coefficient	1.000	.458**	.162
		Sig. (2-tailed)	.	.000	.176
		N	71	71	71
	focus on learning rather than grade	Correlation Coefficient	.458**	1.000	.371**
		Sig. (2-tailed)	.000	.	.001
		N	71	71	71
	focus on demonstrating ability, getting the grade	Correlation Coefficient	.162	.371**	1.000
		Sig. (2-tailed)	.176	.001	.
		N	71	71	71

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

a. gender = female

ANOVA-post-hoc

1.

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Recode1	1	A,A/B	51
	2	B,B/C	44
	3	C-F	28

Descriptive Statistics

Dependent Variable: self-efficacy

Recode1	Mean	Std. Deviation	N
A,A/B	4.2275	.72113	51
B,B/C	3.5580	.75736	44
C-F	3.1714	.87891	28
Total	3.7476	.87845	123

Levene's Test of Equality of Error Variances[a]

Dependent Variable: self-efficacy

F	df1	df2	Sig.
.256	2	120	.774

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + ANOVA1

Tests of Between-Subjects Effects

Dependent Variable: self-efficacy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	22.621[a]	2	11.310	18.976	.000	.240	37.953	1.000
Intercept	1538.157	1	1538.157	2580.676	.000	.956	2580.676	1.000
ANOVA1	22.621	2	11.310	18.976	.000	.240	37.953	1.000
Error	71.523	120	.596					
Total	1821.583	123						
Corrected Total	94.144	122						

a. R Squared = .240 (Adjusted R Squared = .228)

b. Computed using alpha = .05

Custom Hypothesis Tests

Contrast Results (K Matrix)

Recode1 Repeated Contrast		Dependent Variable self-efficacy
Level 1 vs. Level 2	Contrast Estimate	.669
	Hypothesized Value	0
	Difference (Estimate - Hypothesized)	.669
	Std. Error	.159
	Sig.	.000
	95% Confidence Interval for Lower Bound	.355

	Difference	Upper Bound	.984
Level 2 vs. Level 3	Contrast Estimate		.387
	Hypothesized Value		0
	Difference (Estimate - Hypothesized)		.387
	Std. Error		.187
	Sig.		.041
	95% Confidence Interval for Difference	Lower Bound	.017
		Upper Bound	.756

Test Results

Dependent Variable: self-efficacy

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Contrast	22.621	2	11.310	18.976	.000	.240	37.953	1.000
Error	71.523	120	.596					

a. Computed using alpha = .05

Estimated Marginal Means

1. Grand Mean

Dependent Variable: self-efficacy

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
3.652	.072	3.510	3.795

2. Recode1

Dependent Variable: self-efficacy

Recode1	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound

A,A/B	4.227	.108	4.013	4.441
B,B/C	3.558	.116	3.328	3.788
C-F	3.171	.146	2.883	3.460

Contrast Coefficients

	Recode1		
Contrast	A,A/B	B,B/C	C-F
1	2	-1	-1
2	0	-1	1
3	1	-1	0
4	1	0	-1

Contrast Tests

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
self-efficacy	Assume equal variances	1	1.7255	.28562	6.041	120	.000
		2	-.3865	.18664	-2.071	120	.041
		3	.6695	.15885	4.215	120	.000
		4	1.0560	.18159	5.816	120	.000
	Does not assume equal variances	1	1.7255	.28533	6.047	101.322	.000
		2	-.3865	.20156	-1.918	51.346	.061
		3	.6695	.15242	4.392	89.490	.000
		4	1.0560	.19438	5.433	47.167	.000

Post Hoc Tests

Recode1

Multiple Comparisons

Dependent Variable: self-efficacy

			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
	(I) Recode1	(J) Recode1				Lower Bound	Upper Bound
Tukey HSD	A,A/B	B,B/C	.6695*	.15885	.000	.2925	1.0465
		C-F	1.0560*	.18159	.000	.6251	1.4870
	B,B/C	A,A/B	-.6695*	.15885	.000	-1.0465	-.2925
		C-F	.3865	.18664	.100	-.0564	.8294
	C-F	A,A/B	-1.0560*	.18159	.000	-1.4870	-.6251
		B,B/C	-.3865	.18664	.100	-.8294	.0564
Games-Howell	A,A/B	B,B/C	.6695*	.15242	.000	.3062	1.0328
		C-F	1.0560*	.19438	.000	.5856	1.5264
	B,B/C	A,A/B	-.6695*	.15242	.000	-1.0328	-.3062
		C-F	.3865	.20156	.144	-.0999	.8730
	C-F	A,A/B	-1.0560*	.19438	.000	-1.5264	-.5856
		B,B/C	-.3865	.20156	.144	-.8730	.0999

Based on observed means.

The error term is Mean Square(Error) = .596.

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

self-efficacy

			Subset	
	Recode1	N	1	2
Tukey HSD[a,b,c]	C-F	28	3.1714	
	B,B/C	44	3.5580	
	A,A/B	51		4.2275
	Sig.		.076	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = .596.

a. Uses Harmonic Mean Sample Size = 38.437.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

c. Alpha = .05.

Profile Plots

Explore

Descriptives

			Statistic	Std. Error
Residual for selfeffi	Mean		.0000	.06904
	95% Confidence Interval for Mean	Lower Bound	-.1367	
		Upper Bound	.1367	
	5% Trimmed Mean		.0134	
	Median		.1725	

	Variance	.586	
	Std. Deviation	.76567	
	Minimum	-1.97	
	Maximum	1.83	
	Range	3.80	
	Interquartile Range	1.20	
	Skewness	-.362	.218
	Kurtosis	-.541	.433

Extreme Values

			Case Number	Value
Residual for selfeffi	Highest	1	108	1.83
		2	92	1.43
		3	21	1.24
		4	22	1.24
		5	64	1.23
	Lowest	1	60	-1.97
		2	7	-1.83
		3	53	-1.56
		4	79	-1.37
		5	111	-1.36[a]

a. Only a partial list of cases with the value -1.36 are shown in the table of lower extremes.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Residual for selfeffi	.111	123	.001	.967	123	.004

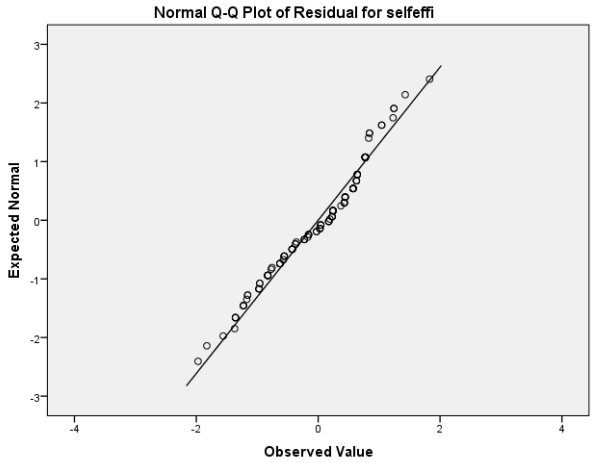
a. Lilliefors Significance Correction

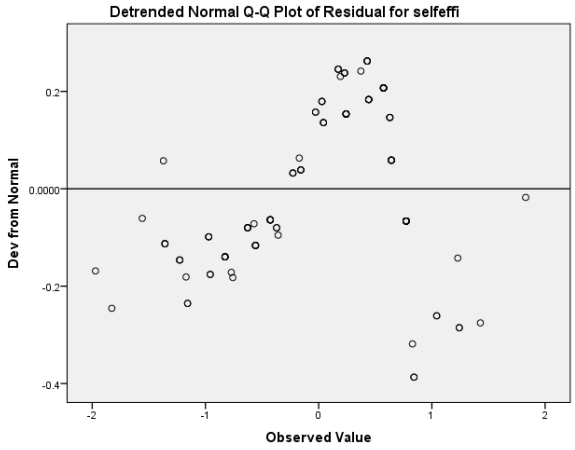
Residual for selfeffi

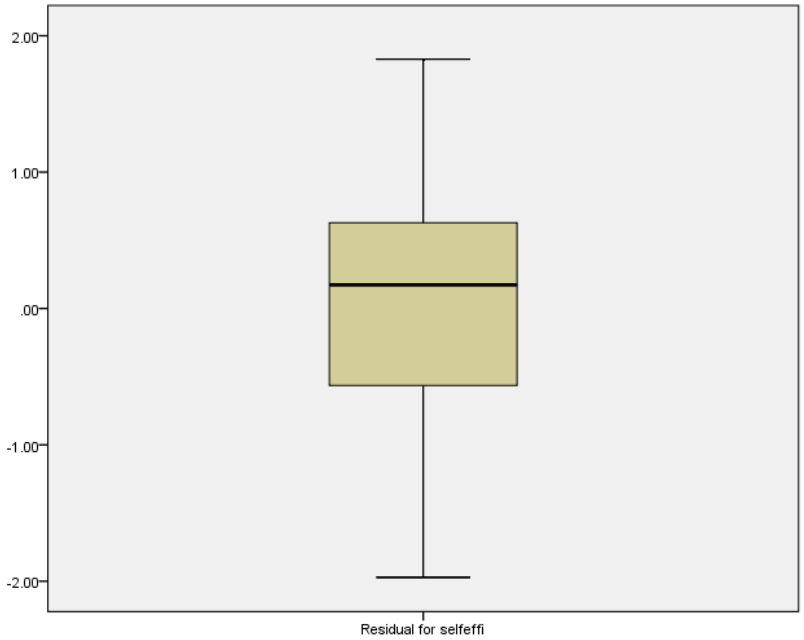
Residual for selfeffi Stem-and-Leaf Plot

Frequency	Stem &	Leaf
2.00	-1 .	89
.00	-1 .	
1.00	-1 .	5
7.00	-1 .	2223333
3.00	-1 .	111
11.00	-0 .	88888899999
6.00	-0 .	666677
11.00	-0 .	44444455555
6.00	-0 .	222333
6.00	-0 .	001111
10.00	0 .	0000001111
11.00	0 .	22222222223
17.00	0 .	44444444455555555
22.00	0 .	6666666677777777777777
3.00	0 .	888
2.00	1 .	00
3.00	1 .	222
1.00	1 .	4
.00	1 .	
1.00	1 .	8

Stem width: 1.00
Each leaf: 1 case(s)


Normal Q-Q Plot of Residual for selfeffi
Expected Normal
Observed Value
3
2
1
0
-1
-2
-3
-4
-2
0
2
4


Detrended Normal Q-Q Plot of Residual for selfeffi
Dev from Normal
Observed Value
0.2
0.0000
-0.2
-0.4
-2
-1
0
1
2



2

Oneway

Descriptives

liklihood of cheating to occur

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
4.0	20	3.6000	1.55259	.34717	2.8734	4.3266	1.00	5.50
3.5-3.9	36	3.8056	1.37984	.22997	3.3387	4.2724	1.00	6.00
3.0-3.4	27	3.7593	1.46347	.28164	3.1803	4.3382	2.00	6.00
2.5-2.9	21	3.4048	1.40195	.30593	2.7666	4.0429	1.50	6.50
<2.5	16	4.2500	1.30384	.32596	3.5552	4.9448	2.00	6.50
Total	120	3.7500	1.42014	.12964	3.4933	4.0067	1.00	6.50

Test of Homogeneity of Variances

liklihood of cheating to occur

Levene Statistic	df1	df2	Sig.
.763	4	115	.551

ANOVA

liklihood of cheating to occur

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		7.066	4	1.767	.872	.483
	Linear Term	Unweighted	1.539	1	1.539	.760	.385
		Weighted	.827	1	.827	.408	.524
		Deviation	6.239	3	2.080	1.027	.384
Within Groups			232.934	115	2.026		
Total			240.000	119			

Contrast Coefficients

	gpa regroup				
Contrast	4.0	3.5-3.9	3.0-3.4	2.5-2.9	<2.5
1	1.5	1.5	-1	-1	-1
2	1	1	1	-1.5	-1.5
3	1	1	1	1	-1

Contrast Tests

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
liklihood of cheating to occur	Assume equal variances	1	-.3057	.80779	-.378	115	.706
		2	-.3173	.85698	-.370	115	.712
		3	10.3196[a]	.67499	15.289	115	.000
	Does not assume equal variances	1	-.3057	.81814	-.374	78.495	.710
		2	-.3173	.83809	-.379	69.350	.706
		3	10.3196[a]	.67274	15.340	89.953	.000

a. The sum of the contrast coefficients is not zero.

Post Hoc Tests

Multiple Comparisons

Dependent Variable: liklihood of cheating to occur

	(I) gpa regroup	(J) gpa regroup	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Tukey HSD	4.0	3.5-3.9	-.20556	.39691	.985	-1.3056	.8945
		3.0-3.4	-.15926	.41987	.996	-1.3230	1.0044
		2.5-2.9	.19524	.44467	.992	-1.0372	1.4276
		<2.5	-.65000	.47736	.653	-1.9730	.6730
	3.5-3.9	4.0	.20556	.39691	.985	-.8945	1.3056
		3.0-3.4	.04630	.36233	1.000	-.9579	1.0505
		2.5-2.9	.40079	.39079	.843	-.6823	1.4839
		<2.5	-.44444	.42762	.837	-1.6296	.7407
	3.0-3.4	4.0	.15926	.41987	.996	-1.0044	1.3230
		3.5-3.9	-.04630	.36233	1.000	-1.0505	.9579
		2.5-2.9	.35450	.41409	.912	-.7932	1.5022
		<2.5	-.49074	.44901	.810	-1.7352	.7537
	2.5-2.9	4.0	-.19524	.44467	.992	-1.4276	1.0372
		3.5-3.9	-.40079	.39079	.843	-1.4839	.6823
		3.0-3.4	-.35450	.41409	.912	-1.5022	.7932
		<2.5	-.84524	.47228	.385	-2.1542	.4637
	<2.5	4.0	.65000	.47736	.653	-.6730	1.9730
		3.5-3.9	.44444	.42762	.837	-.7407	1.6296
		3.0-3.4	.49074	.44901	.810	-.7537	1.7352
		2.5-2.9	.84524	.47228	.385	-.4637	2.1542
Games-Howell	4.0	3.5-3.9	-.20556	.41643	.987	-1.4017	.9906
		3.0-3.4	-.15926	.44705	.996	-1.4365	1.1180
		2.5-2.9	.19524	.46273	.993	-1.1294	1.5199
		<2.5	-.65000	.47621	.654	-2.0215	.7215

	3.5-3.9	4.0	.20556	.41643	.987	-.9906	1.4017
		3.0-3.4	.04630	.36361	1.000	-.9796	1.0722
		2.5-2.9	.40079	.38273	.832	-.6906	1.4922
		<2.5	-.44444	.39892	.798	-1.6006	.7117
	3.0-3.4	4.0	.15926	.44705	.996	-1.1180	1.4365
		3.5-3.9	-.04630	.36361	1.000	-1.0722	.9796
		2.5-2.9	.35450	.41583	.912	-.8282	1.5372
		<2.5	-.49074	.43078	.785	-1.7300	.7485
	2.5-2.9	4.0	-.19524	.46273	.993	-1.5199	1.1294
		3.5-3.9	-.40079	.38273	.832	-1.4922	.6906
		3.0-3.4	-.35450	.41583	.912	-1.5372	.8282
		<2.5	-.84524	.44704	.342	-2.1335	.4430
	<2.5	4.0	.65000	.47621	.654	-.7215	2.0215
		3.5-3.9	.44444	.39892	.798	-.7117	1.6006
		3.0-3.4	.49074	.43078	.785	-.7485	1.7300
		2.5-2.9	.84524	.44704	.342	-.4430	2.1335

Homogeneous Subsets

liklihood of cheating to occur

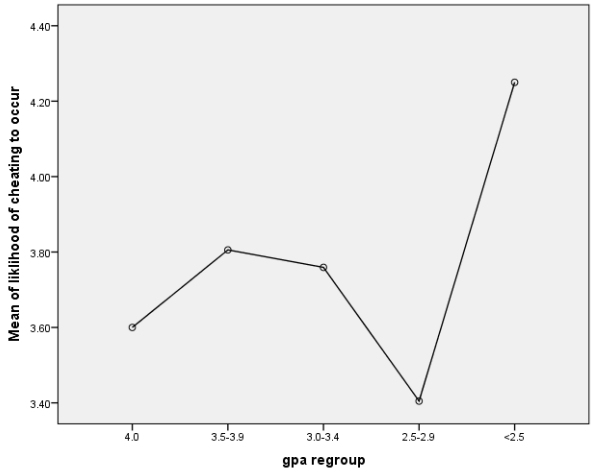
			Subset for alpha = 0.05
	gpa regroup	N	1
Tukey HSD[a,b]	2.5-2.9	21	3.4048
	4.0	20	3.6000
	3.0-3.4	27	3.7593
	3.5-3.9	36	3.8056
	<2.5	16	4.2500
	Sig.		.282

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 22.229.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Means Plots



Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
gpa regroup	1.00	4.0	20
	2.00	3.5-3.9	36
	3.00	3.0-3.4	27
	4.00	2.5-2.9	21
	5.00	<2.5	16

Tests of Between-Subjects Effects

Dependent Variable: liklihood of cheating to occur

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	7.066[a]	4	1.767	.872	.483
Intercept	1574.580	1	1574.580	777.375	.000
gpa2	7.066	4	1.767	.872	.483
Error	232.934	115	2.026		
Total	1927.500	120			
Corrected Total	240.000	119			

a. R Squared = .029 (Adjusted R Squared = -.004)

Estimated Marginal Means

1. Grand Mean

Dependent Variable: liklihood of cheating to occur

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
3.764	.135	3.497	4.031

2. gpa regroup

Dependent Variable: liklihood of cheating to occur

gpa regroup	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
4.0	3.600	.318	2.970	4.230
3.5-3.9	3.806	.237	3.336	4.275
3.0-3.4	3.759	.274	3.217	4.302
2.5-2.9	3.405	.311	2.790	4.020
<2.5	4.250	.356	3.545	4.955