Type Hints Feature Assists in Detecting Bugs

Case Processing Summary

	Type Hints Feature Assists in Detecting Bugs	Cases			
		Valid		Missing	
		N	Percent	N	Percent
Grdaes With Type Hints	Strongly Disagree	6	100.0%	0	0.0%
	Disagree	6	100.0%	0	0.0%
	Neutral	29	100.0%	0	0.0%
	Agree	55	100.0%	0	0.0%
	Strongly Agree	16	100.0%	0	0.0%

Case Processing Summary

	Type Hints Feature Assists in Detecting Bugs	Cases	
		Total	
		N	Percent
Grdaes With Type Hints	Strongly Disagree	6	100.0%
	Disagree	6	100.0%
	Neutral	29	100.0%
	Agree	55	100.0%
	Strongly Agree	16	100.0%

Descriptives

	Type Hints Feature Assists in Detecting Bugs			Statistic
Grdaes With Type Hints	Strongly Disagree	Mean		6.83
		95% Confidence Interval for Mean	Lower Bound	-.42
			Upper Bound	14.09
		5% Trimmed Mean		6.59
		Median		6.00
		Variance		47.767
		Std. Deviation		6.911
		Minimum		0
		Maximum		18
		Range		18
		Interquartile Range		13
		Skewness		.746
		Kurtosis		-.046
	Disagree	Mean		4.50
		95% Confidence Interval for Mean	Lower Bound	-.50
			Upper Bound	9.50
		5% Trimmed Mean		4.39
		Median		2.50
		Variance		22.700
		Std. Deviation		4.764
		Minimum		0
		Maximum		11
		Range		11
		Interquartile Range		10
		Skewness		.799
		Kurtosis		-1.761
	Neutral	Mean		2.62
		95% Confidence Interval for Mean	Lower Bound	1.88
			Upper Bound	3.36
		5% Trimmed Mean		2.58
		Median		2.00
		Variance		3.744
		Std. Deviation		1.935
		Minimum		0
		Maximum		6
		Range		6
		Interquartile Range		3
		Skewness		.550
		Kurtosis		-.864

Descriptives

	Type Hints Feature Assists in Detecting Bugs			Std. Error
Grdaes With Type Hints	Strongly Disagree	Mean		2.822
		95% Confidence Interval for Mean	Lower Bound	
			Upper Bound	
		5% Trimmed Mean		
		Median		
		Variance		
		Std. Deviation		
		Minimum		
		Maximum		
		Range		
		Interquartile Range		
		Skewness		.845
		Kurtosis		1.741
	Disagree	Mean		1.945
		95% Confidence Interval for Mean	Lower Bound	
			Upper Bound	
		5% Trimmed Mean		
		Median		
		Variance		
		Std. Deviation		
		Minimum		
		Maximum		
		Range		
		Interquartile Range		
		Skewness		.845
		Kurtosis		1.741
	Neutral	Mean		.359
		95% Confidence Interval for Mean	Lower Bound	
			Upper Bound	
		5% Trimmed Mean		
		Median		
		Variance		
		Std. Deviation		
		Minimum		
		Maximum		
		Range		
		Interquartile Range		
		Skewness		.434
		Kurtosis		.845

Descriptives

Type Hints Feature Assists in Detecting Bugs			Statistic
Agree	Mean		7.07
	95% Confidence Interval for Mean	Lower Bound	5.77
		Upper Bound	8.37
	5% Trimmed Mean		6.89
	Median		6.00
	Variance		23.143
	Std. Deviation		4.811
	Minimum		1
	Maximum		18
	Range		17
	Interquartile Range		9
	Skewness		.399
	Kurtosis		-.999
Strongly Agree	Mean		9.06
	95% Confidence Interval for Mean	Lower Bound	5.92
		Upper Bound	12.20
	5% Trimmed Mean		9.12
	Median		8.50
	Variance		34.729
	Std. Deviation		5.893
	Minimum		1
	Maximum		16
	Range		15
	Interquartile Range		13
	Skewness		-.014
	Kurtosis		-1.779

Descriptives

Type Hints Feature Assists in Detecting Bugs			Std. Error
Agree	Mean		.649
	95% Confidence Interval for Mean	Lower Bound	
		Upper Bound	
	5% Trimmed Mean		
	Median		
	Variance		
	Std. Deviation		
	Minimum		
	Maximum		
	Range		
	Interquartile Range		
	Skewness		.322
	Kurtosis		.634
Strongly Agree	Mean		1.473
	95% Confidence Interval for Mean	Lower Bound	
		Upper Bound	
	5% Trimmed Mean		
	Median		
	Variance		
	Std. Deviation		
	Minimum		
	Maximum		
	Range		
	Interquartile Range		
	Skewness		.564
	Kurtosis		1.091

Extreme Values[a]

	Type Hints Feature Assists in Detecting Bugs			Case Number	Value
Grdaes With Type Hints	Strongly Disagree	Highest	1	26	18
			2	63	11
			3	24	7
		Lowest	1	29	0
			2	14	0
			3	12	5
	Disagree	Highest	1	38	11
			2	95	10
			3	83	3
		Lowest	1	56	0
			2	48	1
			3	64	2
	Neutral	Highest	1	9	6
			2	11	6
			3	51	6
			4	98	6
			5	44	5[b]
		Lowest	1	75	0
			2	46	0
			3	45	0
			4	107	1
			5	84	1[c]
	Agree	Highest	1	30	18
			2	4	16
			3	5	15
			4	80	15
			5	53	14[d]
		Lowest	1	112	1
			2	105	1
			3	65	1
			4	42	1
			5	40	1[c]
	Strongly Agree	Highest	1	3	16
			2	31	16
			3	33	16
			4	49	16
			5	16	15
		Lowest	1	68	1
			2	1	1

Extreme Values[a]

	Type Hints Feature Assists in Detecting Bugs	Case Number	Value
	3	47	3
	4	27	3
	5	103	4

a. The requested number of extreme values exceeds the number of data points. A smaller number of extremes is displayed.

b. Only a partial list of cases with the value 5 are shown in the table of upper extremes.

c. Only a partial list of cases with the value 1 are shown in the table of lower extremes.

d. Only a partial list of cases with the value 14 are shown in the table of upper extremes.

Tests of Normality

	Type Hints Feature Assists in Detecting Bugs	Kolmogorov-Smirnov[a]			Shapiro-...
		Statistic	df	Sig.	Statistic
Grdaes With Type Hints	Strongly Disagree	.172	6	.200*	.922
	Disagree	.290	6	.125	.827
	Neutral	.212	29	.002	.898
	Agree	.121	55	.043	.930
	Strongly Agree	.174	16	.200*	.865

Tests of Normality

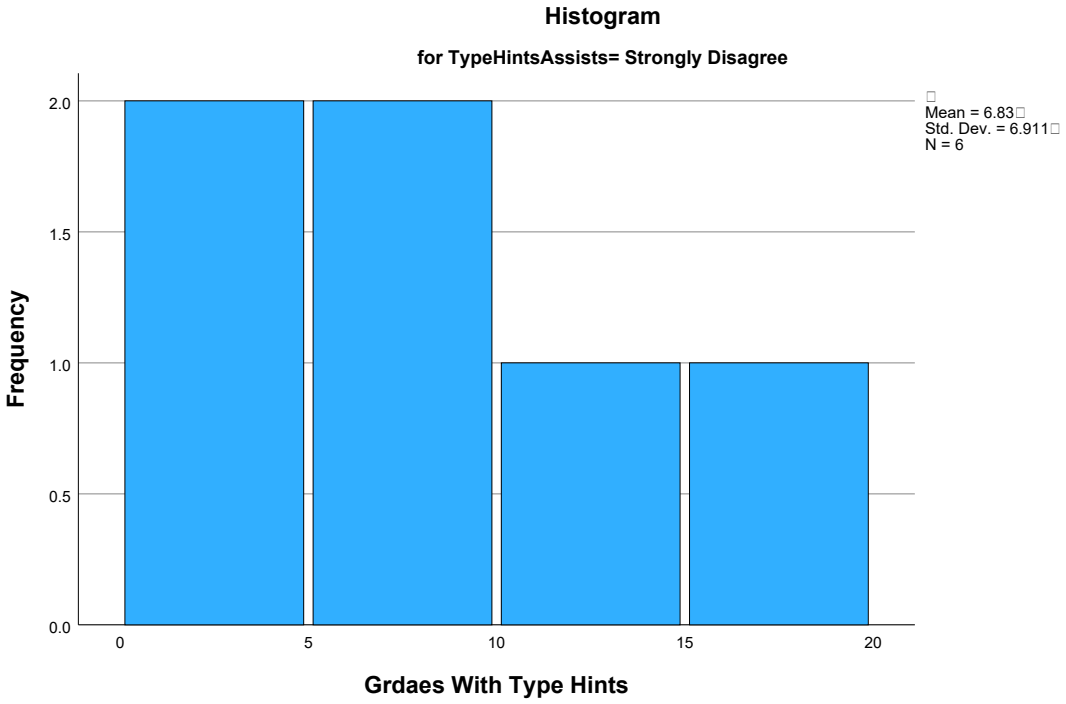
	Type Hints Feature Assists in Detecting Bugs	Shapiro-Wilk	
		df	Sig.
Grdaes With Type Hints	Strongly Disagree	6	.519
	Disagree	6	.101
	Neutral	29	.009
	Agree	55	.003
	Strongly Agree	16	.023

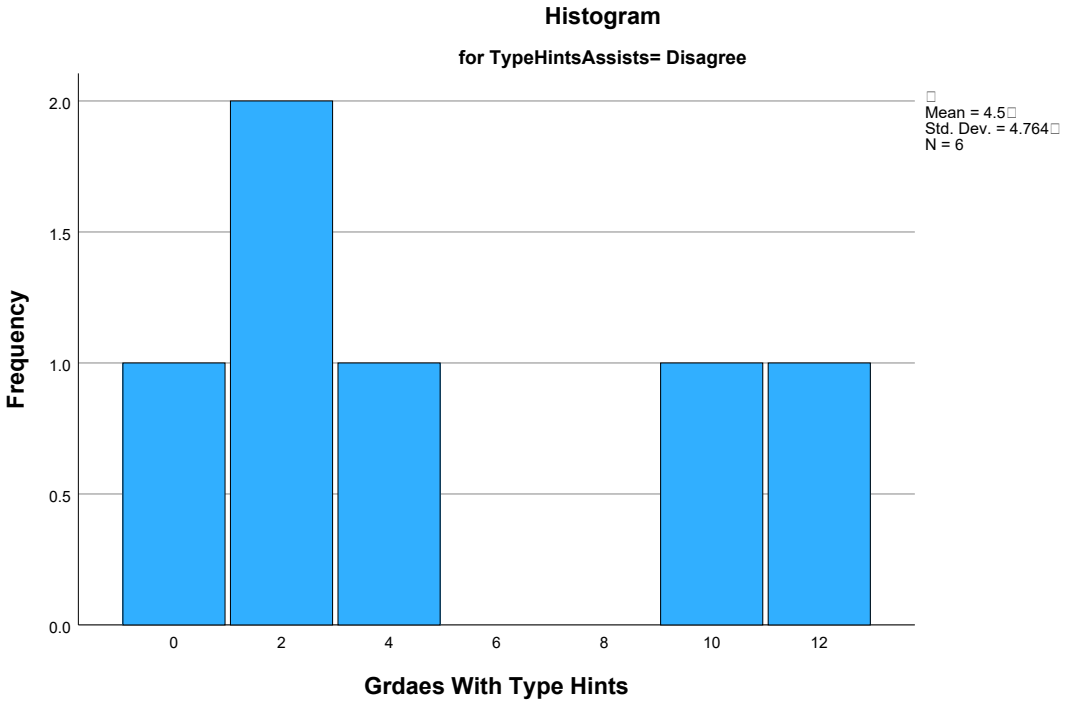
*. This is a lower bound of the true significance.

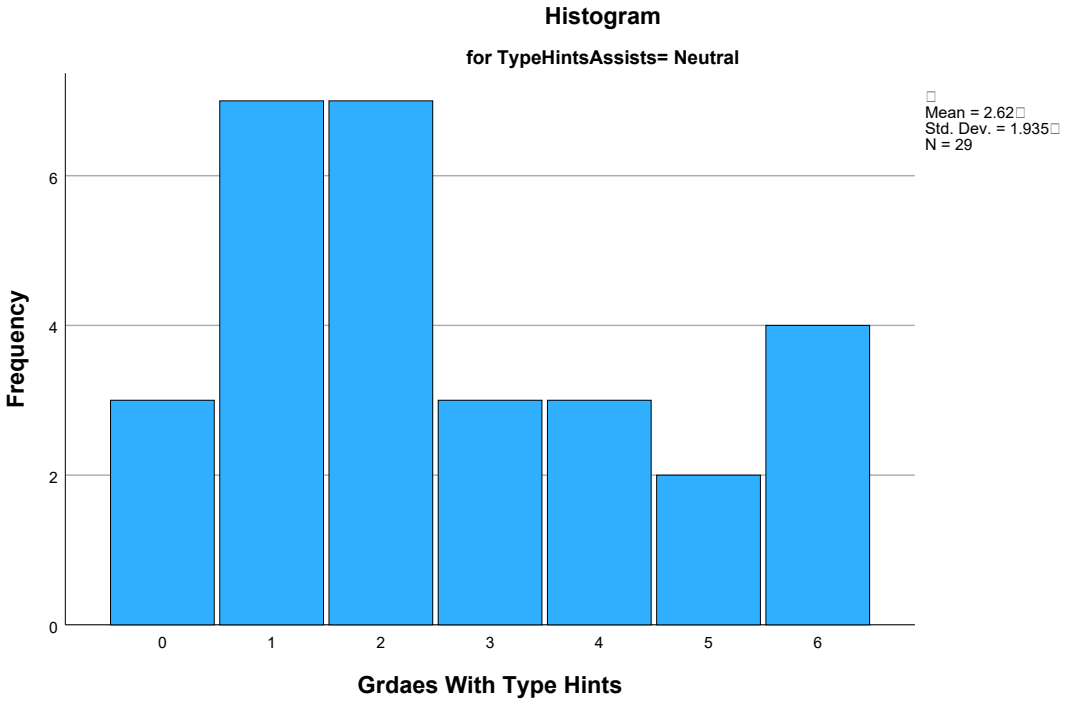
a. Lilliefors Significance Correction

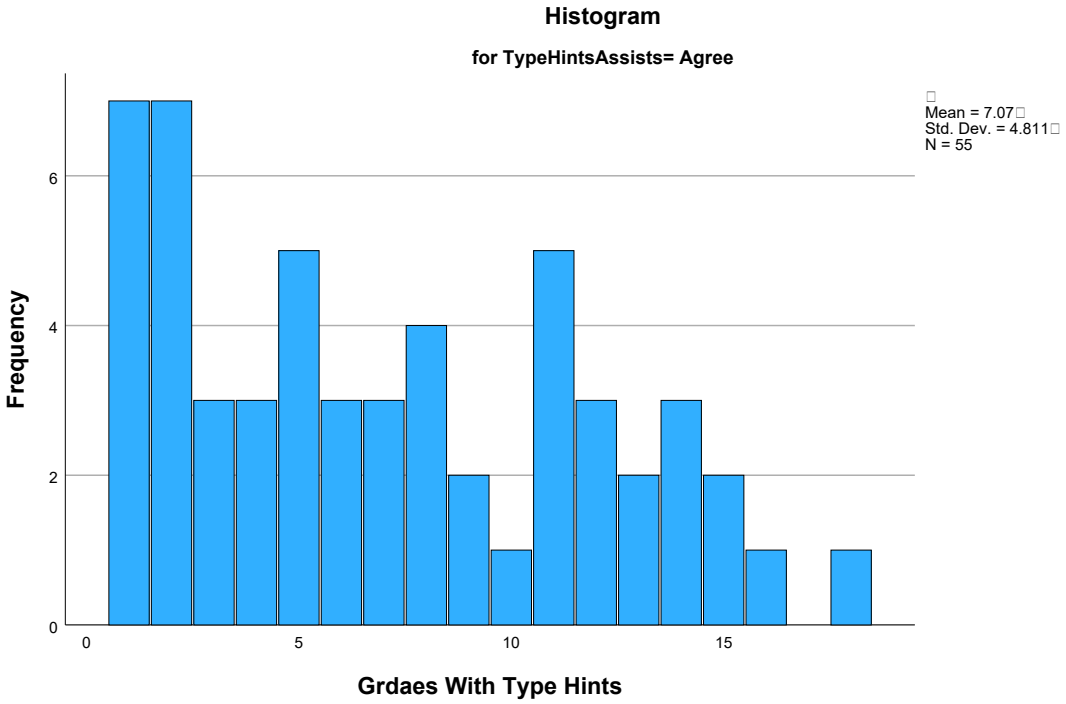
Grdaes With Type Hints

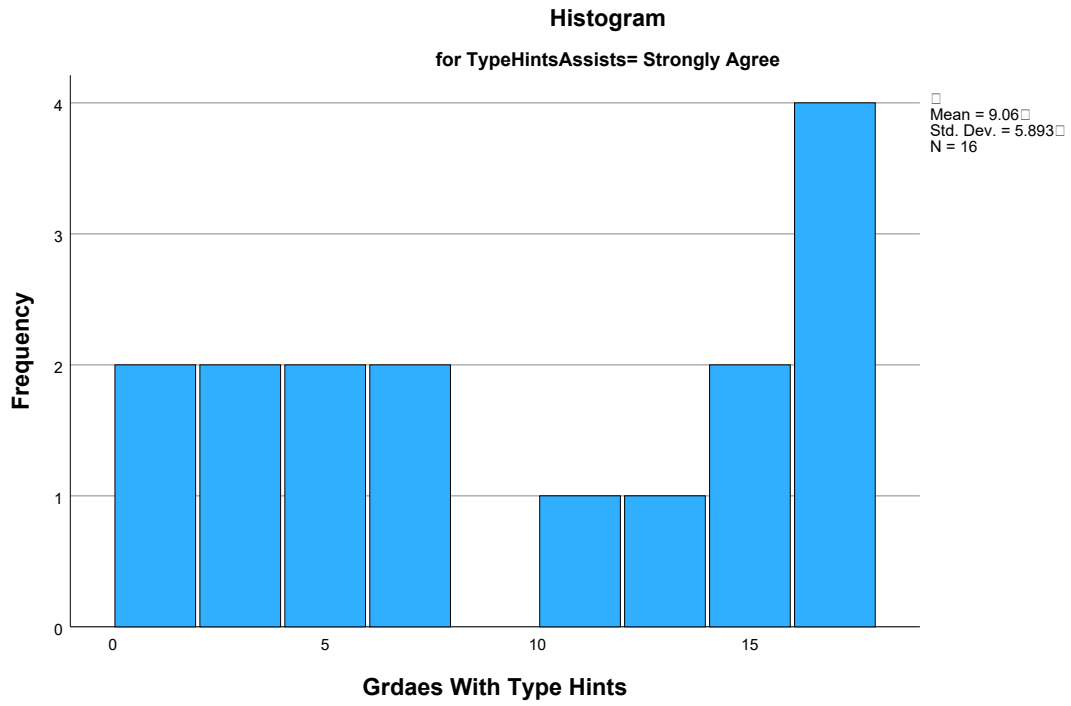
Histograms


Histogram
for TypeHintsAssists= Strongly Disagree
Mean = 6.83
Std. Dev. = 6.911
N = 6
Frequency
2.0
1.5
1.0
0.5
0.0
0
5
10
15
20
Grdaes With Type Hints

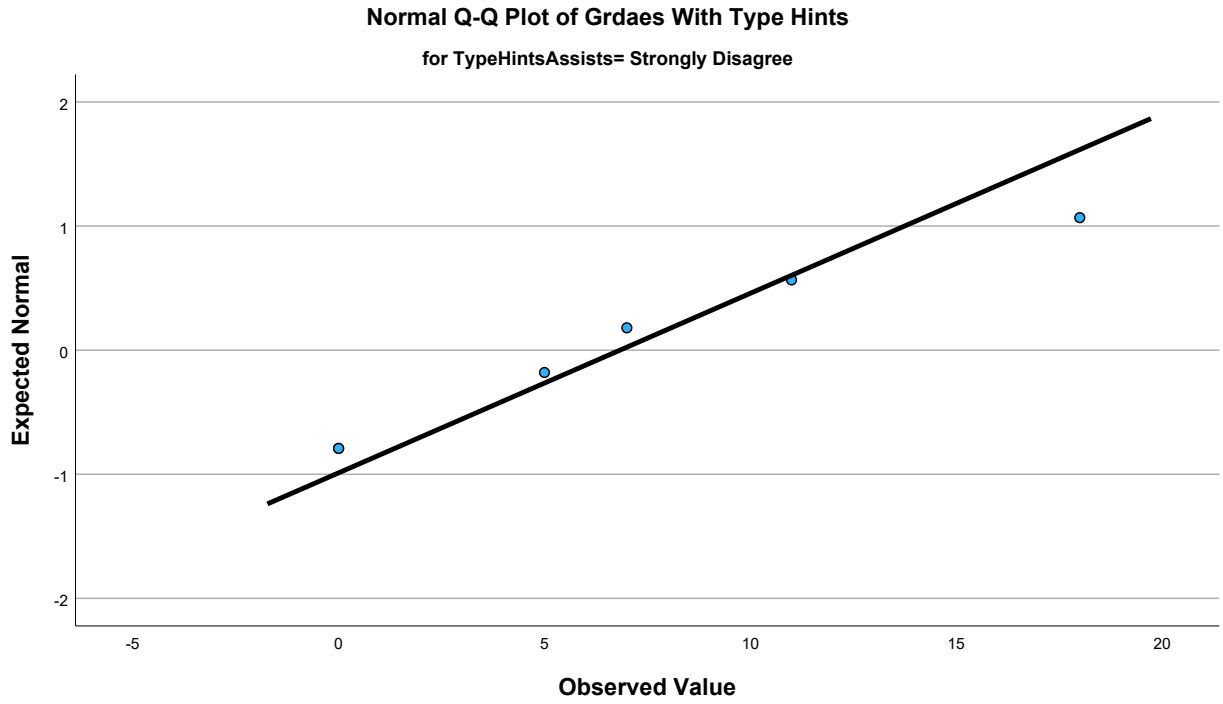

Histogram
for TypeHintsAssists= Disagree
Mean = 4.5
Std. Dev. = 4.764
N = 6
Frequency
2.0
1.5
1.0
0.5
0.0
0
2
4
6
8
10
12
Grdaes With Type Hints

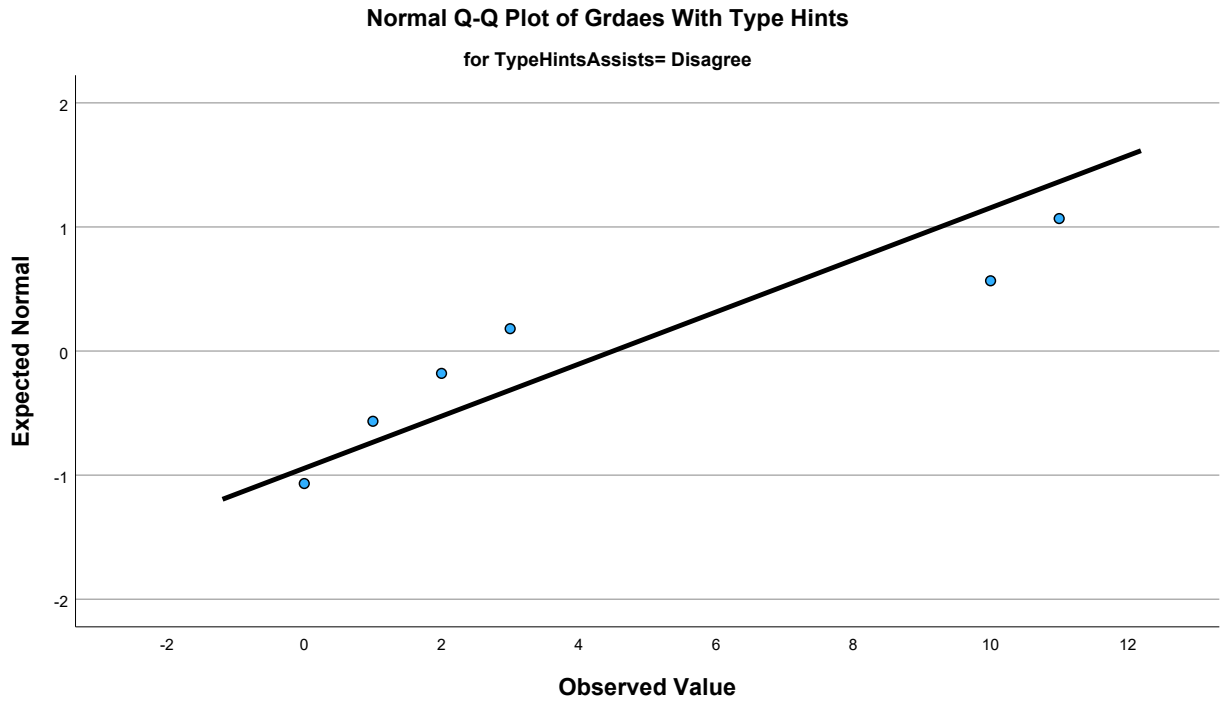

Histogram
for TypeHintsAssists= Neutral
Mean = 2.62
Std. Dev. = 1.935
N = 29
Frequency
0
2
4
6
0
1
2
3
4
5
6
Grdaes With Type Hints

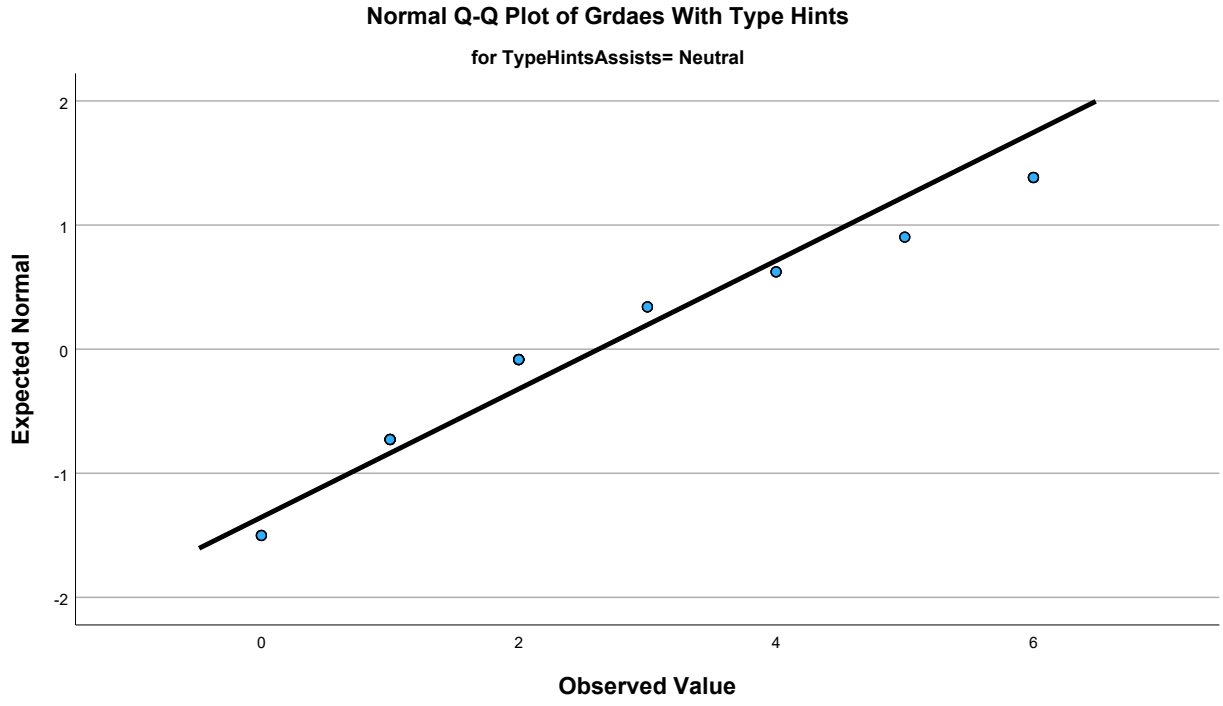

Histogram
for TypeHintsAssists= Agree
Mean = 7.07
Std. Dev. = 4.811
N = 55
Frequency
0
2
4
6
0
5
10
15
Grdaes With Type Hints

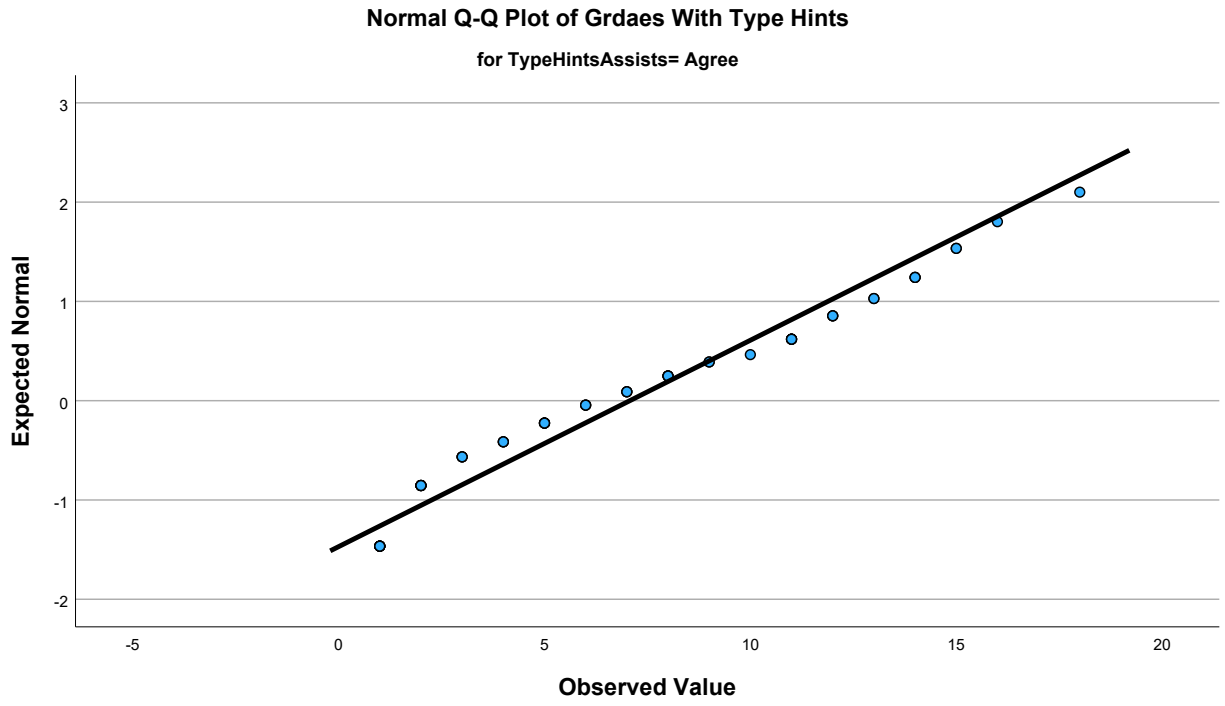


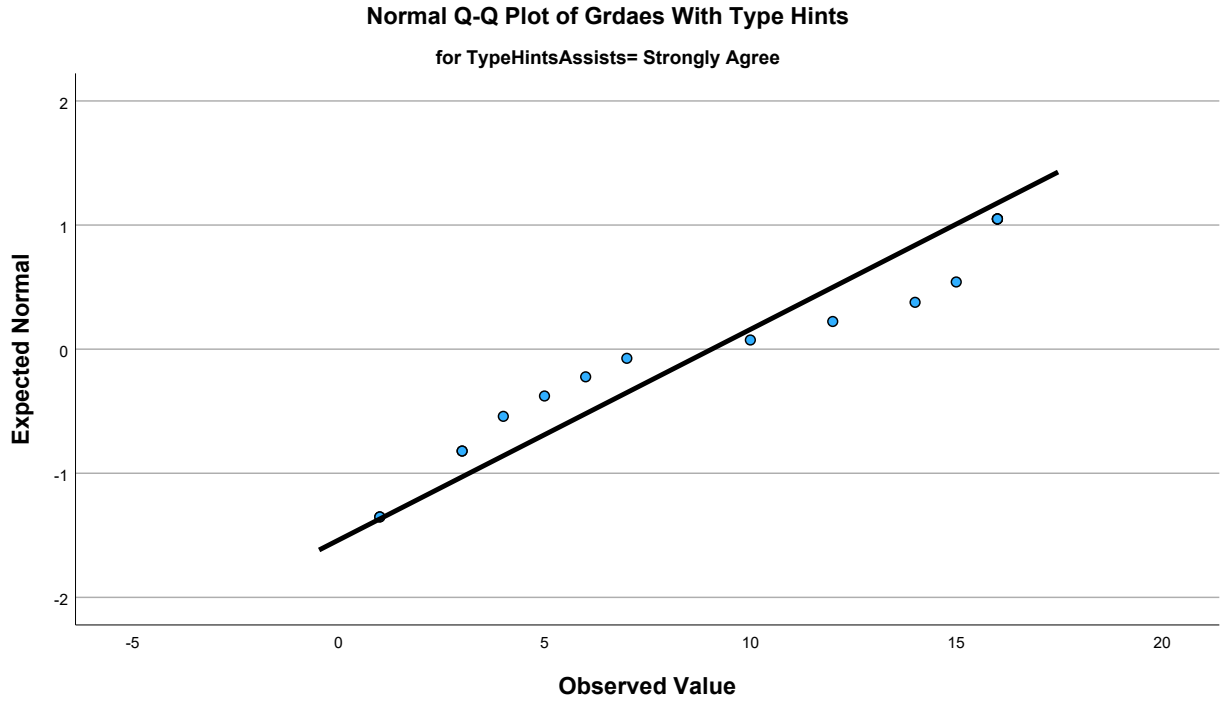
Normal Q-Q Plots



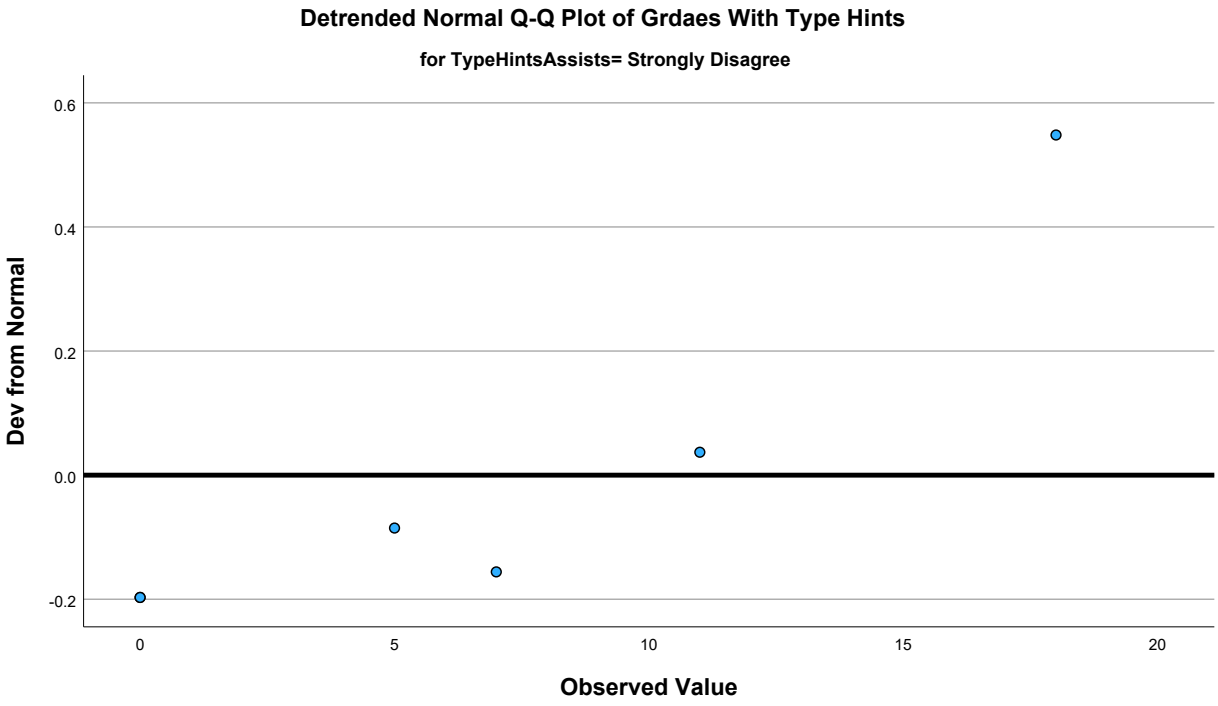

Normal Q-Q Plot of Grdaes With Type Hints
for TypeHintsAssists= Disagree
Expected Normal
2
1
0
-1
-2
-2
0
2
4
6
8
10
12
Observed Value

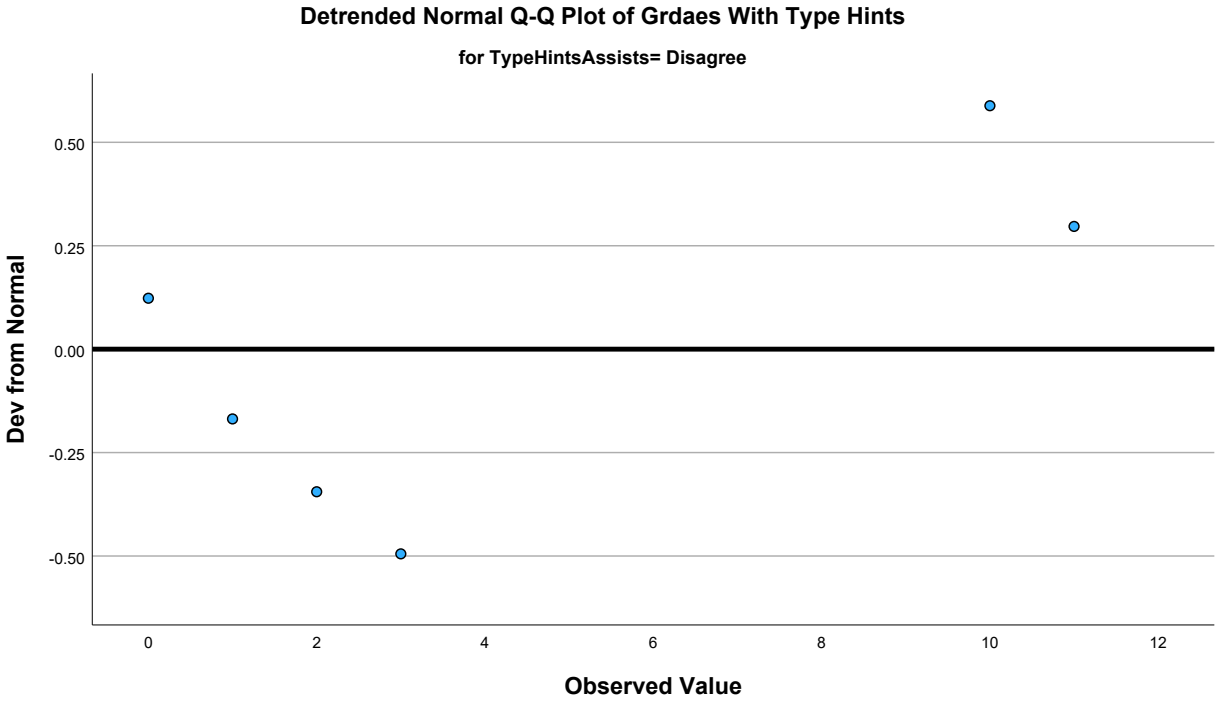

Normal Q-Q Plot of Grdaes With Type Hints
for TypeHintsAssists= Neutral
Expected Normal
2
1
0
-1
-2
0
2
4
6
Observed Value

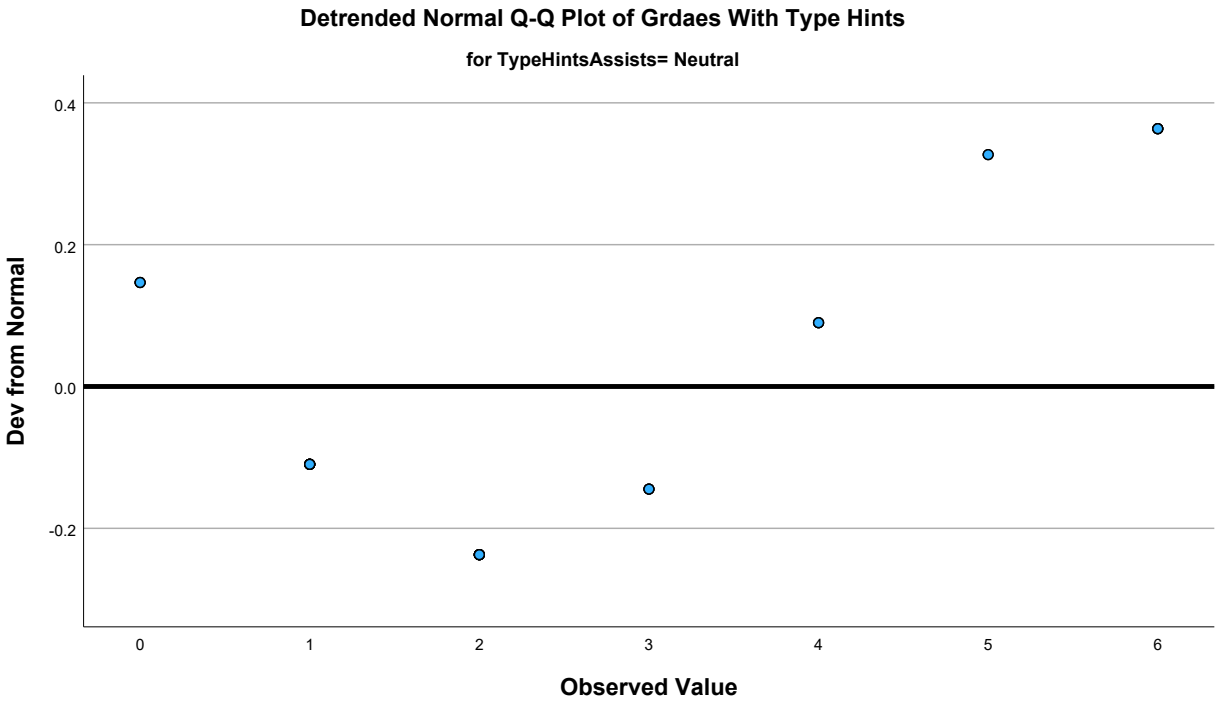


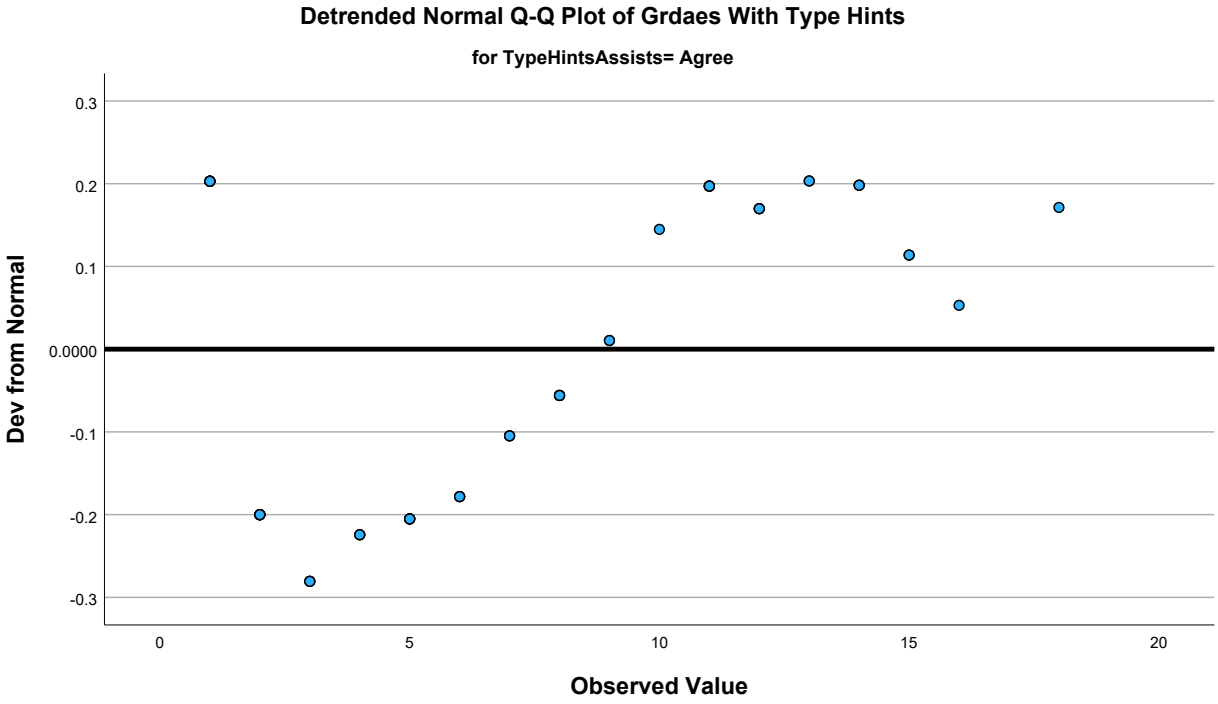


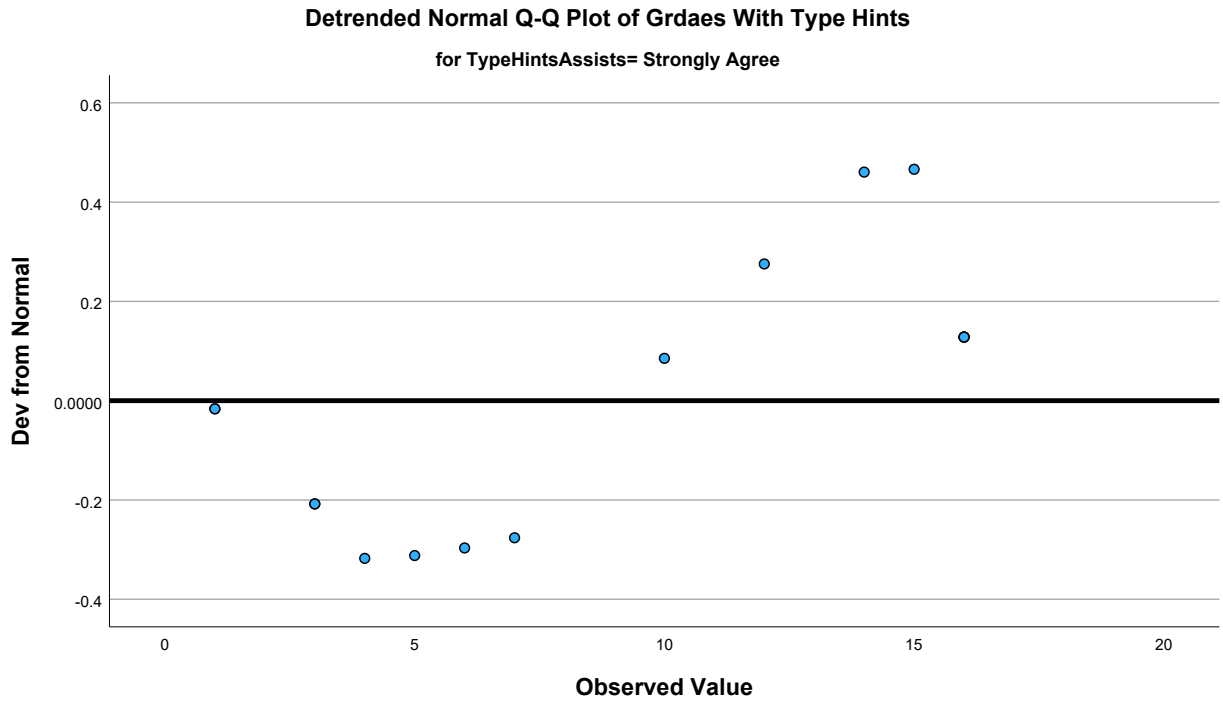
Detrended Normal Q-Q Plots


Detrended Normal Q-Q Plot of Grdaes With Type Hints
for TypeHintsAssists= Strongly Disagree
Dev from Normal
0.6
0.4
0.2
0.0
-0.2
0
5
10
15
20
Observed Value

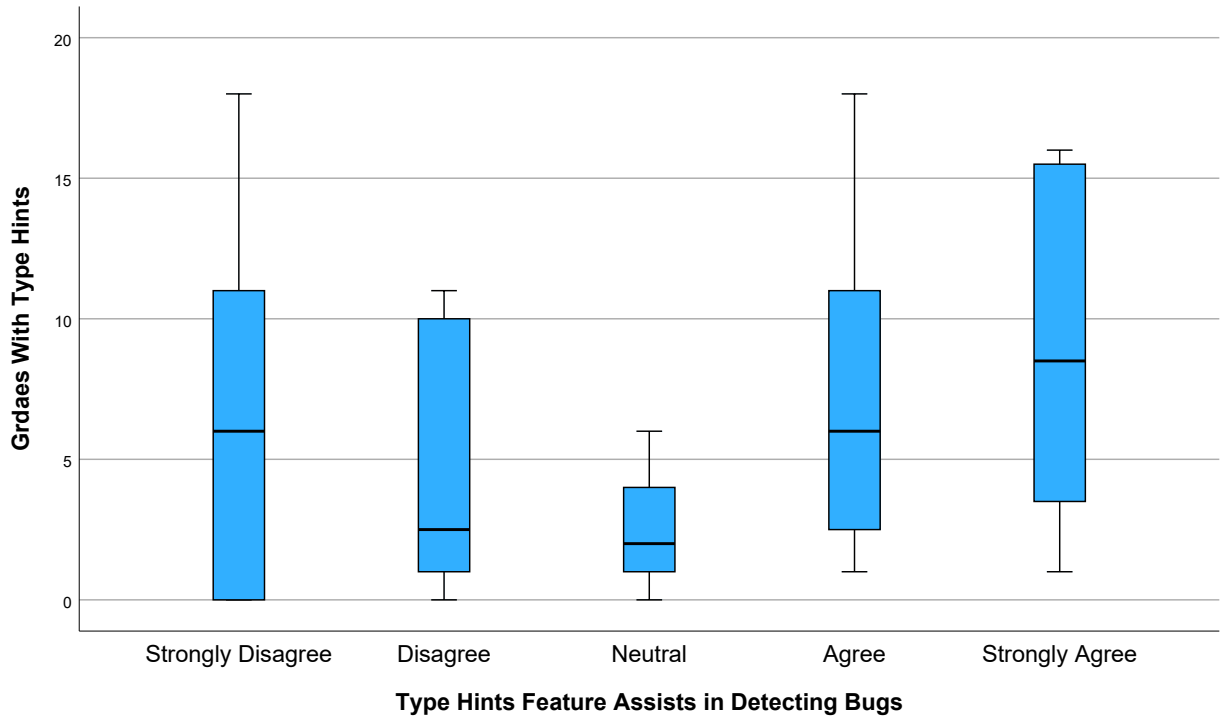

Detrended Normal Q-Q Plot of Grdaes With Type Hints
for TypeHintsAssists= Disagree
Dev from Normal
0.50
0.25
0.00
-0.25
-0.50
0
2
4
6
8
10
12
Observed Value


Detrended Normal Q-Q Plot of Grdaes With Type Hints
for TypeHintsAssists= Neutral
Dev from Normal
0.4
0.2
0.0
-0.2
0
1
2
3
4
5
6
Observed Value


Detrended Normal Q-Q Plot of Grdaes With Type Hints
for TypeHintsAssists= Agree
Dev from Normal
0.3
0.2
0.1
0.0000
-0.1
-0.2
-0.3
0
5
10
15
20
Observed Value


Detrended Normal Q-Q Plot of Grdaes With Type Hints
for TypeHintsAssists= Strongly Agree
Dev from Normal
0.6
0.4
0.2
0.0000
-0.2
-0.4
0
5
10
15
20
Observed Value

Boxplots


Grdaes With Type Hints
20
15
10
5
0
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
Type Hints Feature Assists in Detecting Bugs