

```
1083 0 OUTPUT ACTIVATE LimitsofAgreementOutput.  
1083 0 M> OUTPUT ACTIVATE LimitsofAgreementOutput.  
1084 0 TITLE 'Limits of Agreement with Confidence Intervals'.  
1084 0 M> TITLE 'Limits of Agreement with Confidence Intervals'.
```

Limits of Agreement with Confidence Intervals

```

1085 0
1085 0 M>
1086 0 GET DATA
1086 0 M> GET DATA
1087 0 /TYPE=TXT
1087 0 M> /TYPE=TXT
1088 0 /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Limits of
Agreement\dataset.csv'
1088 0 M> /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Limits
of Agreement\dataset.csv'
1089 0 /ENCODING='UTF8'
1089 0 M> /ENCODING='UTF8'
1090 0 /DELCASE=LINE
1090 0 M> /DELCASE=LINE
1091 0 /DELIMITERS=', '
1091 0 M> /DELIMITERS=', '
1092 0 /QUALIFIER='''
1092 0 M> /QUALIFIER='''
1093 0 /ARRANGEMENT=DELIMITED
1093 0 M> /ARRANGEMENT=DELIMITED
1094 0 /FIRSTCASE=2
1094 0 M> /FIRSTCASE=2
1095 0 /VARIABLES=
1095 0 M> /VARIABLES=
1096 0 school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
1096 0 M> school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
1097 0 Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
1097 0 M> Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
1098 0 traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 famsup
A8
1098 0 M> traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 fams
up A8
1099 0 paid A8 activities A8 nursery A8 higher A8 internet A8 romantic A
8
1099 0 M> paid A8 activities A8 nursery A8 higher A8 internet A8 romanti
c A8
1100 0 famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F
8.0

```

Limits of Agreement with Confidence Intervals

```

1100 0 M> famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F8.0
1101 0 absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
1101 0 M> absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
1102 0 DATASET NAME LimitsofAgreementData.
1102 0 M> DATASET NAME LimitsofAgreementData.
1103 0 EXECUTE.
1103 0 M> EXECUTE.
1104 0
1104 0 M>
1105 0 COMPUTE subject_id=$CASENUM.
1105 0 M> COMPUTE subject_id=$CASENUM.
1106 0 COMPUTE Dalc_R=6-Dalc.
1106 0 M> COMPUTE Dalc_R=6-Dalc.
1107 0 COMPUTE Walc_R=6-Walc.
1107 0 M> COMPUTE Walc_R=6-Walc.
1108 0 RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
1108 0 M> RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
1109 0 INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
1109 0 M> INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
1110 0 RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
1110 0 M> RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
1111 0 INTO G1_cat3 G2_cat3 G3_cat3.
1111 0 M> INTO G1_cat3 G2_cat3 G3_cat3.
1112 0 RECODE G1 G3 (LO THRU 8=1) (9 THRU 10=2) (11 THRU 12=3) (13 THRU 14=4) (15 THRU HI=5)
1112 0 M> RECODE G1 G3 (LO THRU 8=1) (9 THRU 10=2) (11 THRU 12=3) (13 THRU 14=4) (15 THRU HI=5)
1113 0 INTO G1_cat5 G3_cat5.
1113 0 M> INTO G1_cat5 G3_cat5.
1114 0 VARIABLE LEVEL schoolsup_b famsup_b paid_b activities_b higher_b internet_b G1_cat3 G2_cat3 G3_cat3 G1_cat5 G3_cat5 (NOMINAL).
1114 0 M> VARIABLE LEVEL schoolsup_b famsup_b paid_b activities_b higher_b internet_b G1_cat3 G2_cat3 G3_cat3 G1_cat5 G3_cat5 (NOMINAL).

```

Limits of Agreement with Confidence Intervals

```
1115  0  FORMATS subject_id schoolsup_b famsup_b paid_b activities_b higher_b
internet_b G1_cat3 G2_cat3 G3_cat3 G1_cat5 G3_cat5 (F5
      .0).
1115  0 M>  FORMATS subject_id schoolsup_b famsup_b paid_b activities_b higher
_b internet_b G1_cat3 G2_cat3 G3_cat3 G1_cat5 G3_cat5
      (F5.0).
1116  0  EXECUTE.
1116  0 M>  EXECUTE.
1117  0
1117  0 M>
1118  0  * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
1118  0 M>  * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
1119  0  TITLE 'Limits of Agreement With Confidence Intervals'.
1119  0 M>  TITLE 'Limits of Agreement With Confidence Intervals'.
```

Limits of Agreement With Confidence Intervals

```
1120 0 SUBTITLE 'G3 minus G2 limits and uncertainty diagnostics'.  
1120 0 M> SUBTITLE 'G3 minus G2 limits and uncertainty diagnostics'.
```

Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics

```
1121  0  COMPUTE loa_difference=G3-G2.
1121  0  M>  COMPUTE loa_difference=G3-G2.
1122  0  COMPUTE loa_mean=(G2+G3)/2.
1122  0  M>  COMPUTE loa_mean=(G2+G3)/2.
1123  0  DESCRIPTIVES VARIABLES=loa_difference loa_mean /STATISTICS=MEAN STDDEV VARIANCE MIN MAX.
1123  0  M>  DESCRIPTIVES VARIABLES=loa_difference loa_mean /STATISTICS=MEAN STDDEV VARIANCE MIN MAX.
```

Descriptives

Notes

Output Created		16-JUL-2026 21:10:12
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Limits of Agreement\dataset.csv
	Active Dataset	LimitsofAgreementData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=loa_difference loa_mean /STATISTICS=MEAN STDDEV VARIANCE MIN MAX.
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.08

[LimitsofAgreementData]

Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
loa_difference	649	-9.00	6.00	.3359	1.27824	1.634
loa_mean	649	.00	19.00	11.7381	3.00911	9.055
Valid N (listwise)	649					

1124 0 T-TEST /TESTVAL=0 /VARIABLES=loa_difference /CRITERIA=CI(.95).

1124 0 M> T-TEST /TESTVAL=0 /VARIABLES=loa_difference /CRITERIA=CI(.95).

T-Test

Notes

Output Created	16-JUL-2026 21:10:12	
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Limits of Agreement\dataset.csv
	Active Dataset	Limits of Agreement Data
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
Syntax	T-TEST /TESTVAL=0 /VARIABLES=loa_difference /CRITERIA=CI(.95).	
Resources	Processor Time	00:00:00.08
	Elapsed Time	00:00:00.10

Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
loa_difference	649	.3359	1.27824	.05018

One-Sample Test

Test Value = 0						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
loa_difference	6.695	648	.000	.33590	.2374	.4344

1125 0 CORRELATIONS /VARIABLES=loa_mean loa_difference /PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.

1125 0 M> CORRELATIONS /VARIABLES=loa_mean loa_difference /PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.

Correlations

Notes

Output Created		16-JUL-2026 21:10:12
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Limits of Agreement\dataset.csv
	Active Dataset	LimitsofAgreementData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.

Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics

Notes

Syntax	CORRELATIONS /VARIABLES=loa_mean loa_difference /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.	
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.08

Correlations

		loa_mean	loa_difference
loa_mean	Pearson Correlation	1	.253**
	Sig. (2-tailed)		.000
	N	649	649
loa_difference	Pearson Correlation	.253**	1
	Sig. (2-tailed)	.000	
	N	649	649

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

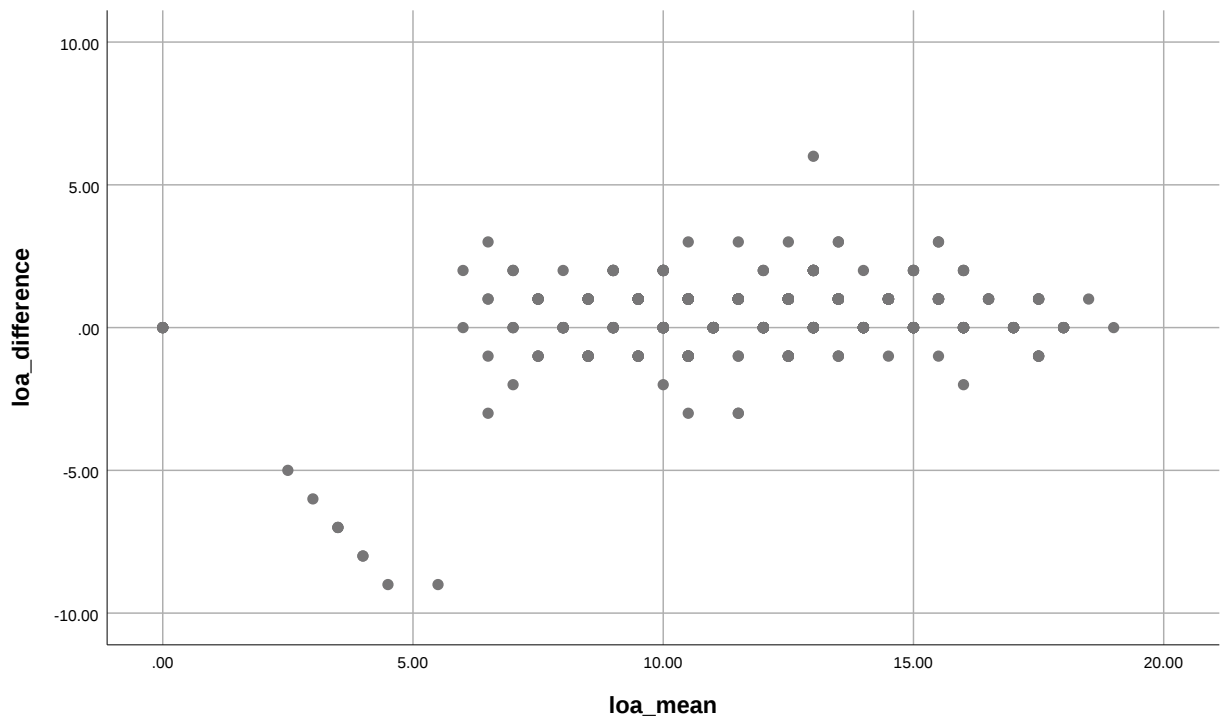
```
1126 0 GRAPH /SCATTERPLOT(BIVAR)=loa_mean WITH loa_difference.
1126 0 M> GRAPH /SCATTERPLOT(BIVAR)=loa_mean WITH loa_difference.
```

Graph

Limits of Agreement With Confidence Intervals G3 minus G2 limits and uncertainty diagnostics

Notes

Output Created		16-JUL-2026 21:10:12
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Limits of Agreement\dataset.csv
	Active Dataset	LimitsofAgreementData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /SCATTERPLOT (BIVAR)=loa_mean WITH loa_difference.
Resources	Processor Time	00:00:00.59
	Elapsed Time	00:00:00.54



Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics

1127 0 EXAMINE VARIABLES=loa_difference /PLOT=HISTOGRAM NPLOT /STATISTICS=DESCRIPTIVES.

1127 0 M> EXAMINE VARIABLES=loa_difference /PLOT=HISTOGRAM NPLOT /STATISTICS=DESCRIPTIVES.

Explore

Notes

Output Created		16-JUL-2026 21:10:12
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Limits of Agreement\dataset.csv
	Active Dataset	LimitsofAgreementData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User-defined missing values for dependent variables are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any dependent variable or factor used.
Syntax		EXAMINE VARIABLES=loa_difference /PLOT=HISTOGRAM NPLOT /STATISTICS=DESCRIPTIVES.
Resources	Processor Time	00:00:01.77
	Elapsed Time	00:00:01.14

Total Sample

Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
loa_difference	649	100.0%	0	0.0%	649	100.0%

Descriptives

		Statistic	Std. Error
loa_difference	Mean	.3359	.05018
	95% Confidence Interval for Mean	Lower Bound	.2374
		Upper Bound	.4344
	5% Trimmed Mean	.4135	
	Median	.0000	
	Variance	1.634	
	Std. Deviation	1.27824	
	Minimum	-9.00	
	Maximum	6.00	
	Range	15.00	
	Interquartile Range	1.00	
	Skewness	-3.031	.096
	Kurtosis	19.487	.192

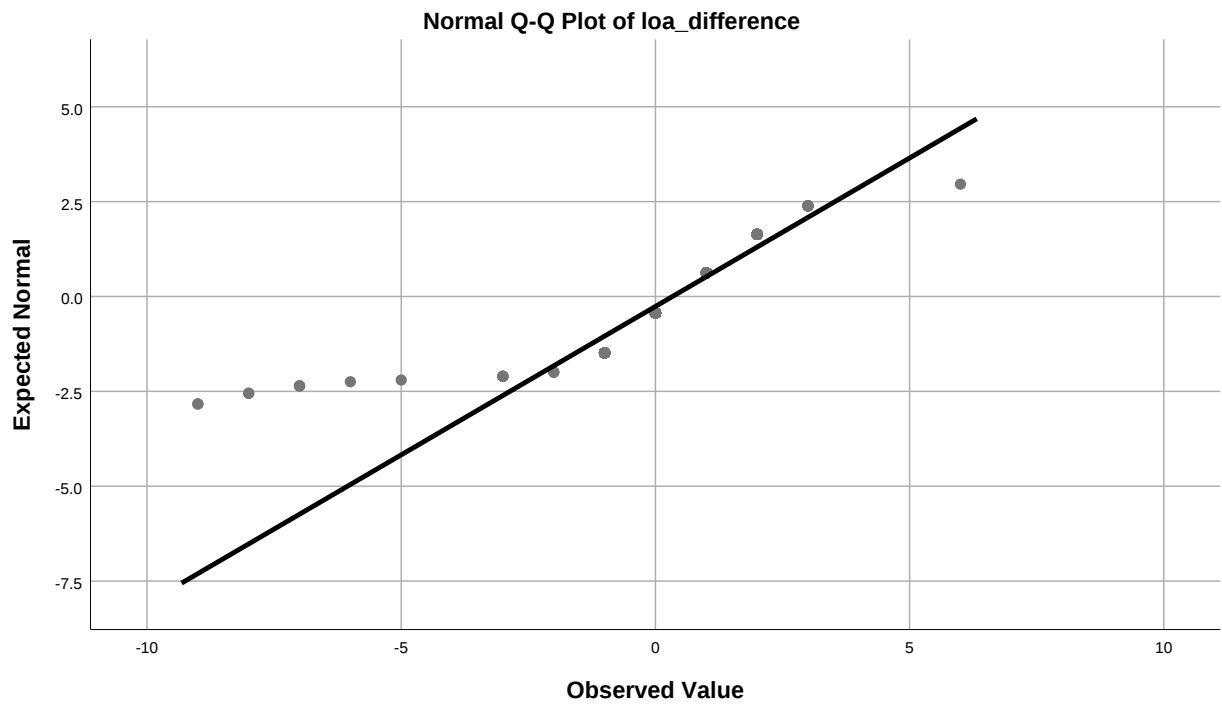
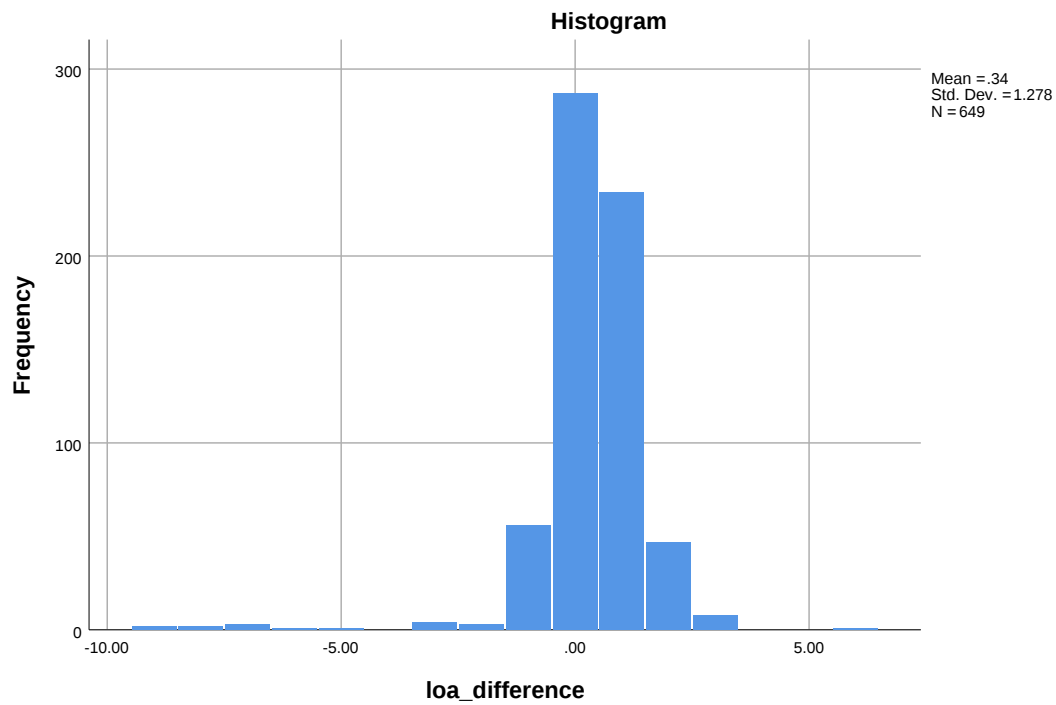
Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
loa_difference	.285	649	.000	.685	649	.000

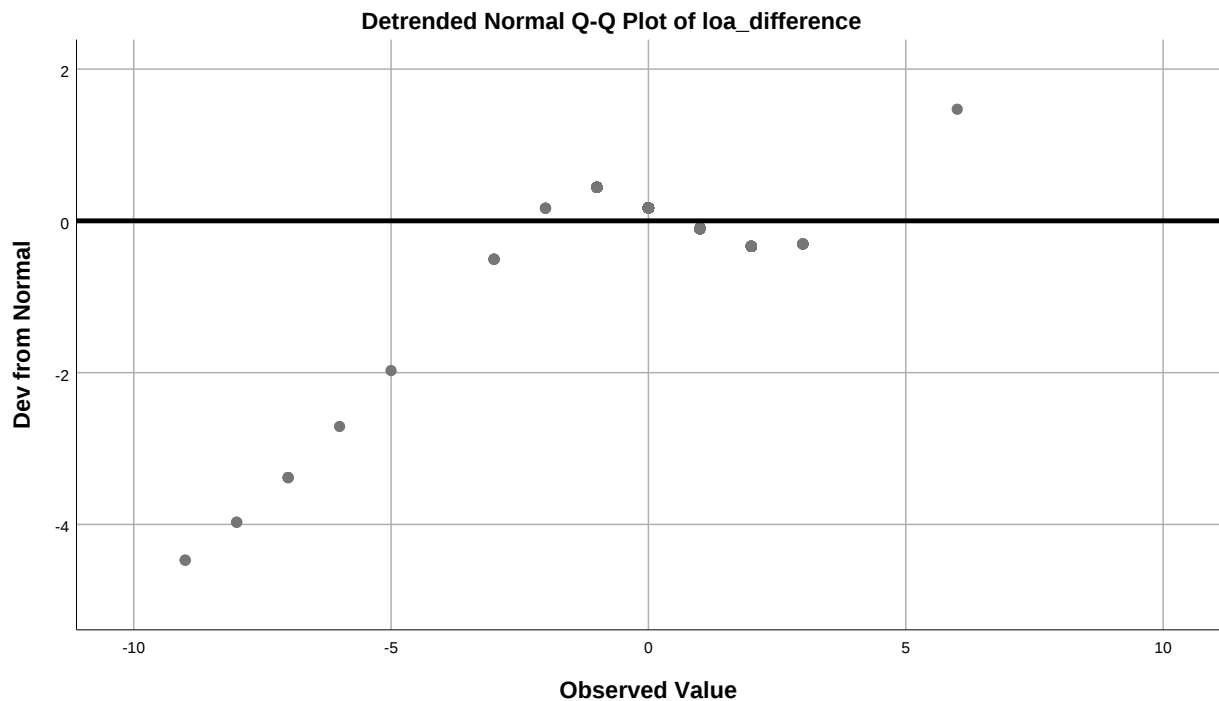
a. Lilliefors Significance Correction

loa_difference

Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics



Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics



```

1128 0 * END METHOD-SPECIFIC SPSS WORKFLOW.
1128 0 M> * END METHOD-SPECIFIC SPSS WORKFLOW.
1129 0
1129 0 M>
1130 0 SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Limi
ts of Agreement\SPSS_Output\sav\limits-of-agreement_sp
      ss_ready_data.sav' /COMPRESSED.
1130 0 M> SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\L
imits of Agreement\SPSS_Output\sav\limits-of-agreement
      _spss_ready_data.sav' /COMPRESSED.

1131 0
1131 0 M>
1132 0 ECHO '=====
====='.
1132 0 M> ECHO '=====
====='.
=====
1133 0 ECHO 'LIMITS OF AGREEMENT WITH CONFIDENCE INTERVALS'.
1133 0 M> ECHO 'LIMITS OF AGREEMENT WITH CONFIDENCE INTERVALS'.
LIMITS OF AGREEMENT WITH CONFIDENCE INTERVALS

```

Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics

```
1134 0 ECHO 'Design: Numerical 95% agreement limits for G3 minus G2, including uncertainty in bias and each limit.'.
1134 0 M> ECHO 'Design: Numerical 95% agreement limits for G3 minus G2, including uncertainty in bias and each limit.'.
Design: Numerical 95% agreement limits for G3 minus G2, including uncertainty in bias and each limit.
1135 0 ECHO 'Null hypothesis: The G2-G3 bias is zero and the population agreement interval is acceptably narrow.'.
1135 0 M> ECHO 'Null hypothesis: The G2-G3 bias is zero and the population agreement interval is acceptably narrow.'.
Null hypothesis: The G2-G3 bias is zero and the population agreement interval is acceptably narrow.
1136 0 ECHO 'Formula: LOA=bias +/- 1.96 SD(d); CI_bias=bias +/- t SE_bias; CI_LOA=LOA +/- t SE_LOA.'.
1136 0 M> ECHO 'Formula: LOA=bias +/- 1.96 SD(d); CI_bias=bias +/- t SE_bias; CI_LOA=LOA +/- t SE_LOA.'.
Formula: LOA=bias +/- 1.96 SD(d); CI_bias=bias +/- t SE_bias; CI_LOA=LOA +/- t SE_LOA.
1137 0 ECHO 'Variables: G2, G3'.
1137 0 M> ECHO 'Variables: G2, G3'.
Variables: G2, G3
1138 0 ECHO 'Rows analyzed: 649'.
1138 0 M> ECHO 'Rows analyzed: 649'.
Rows analyzed: 649
1139 0 ECHO 'bias_ci_high = 0.43442757885046335'.
1139 0 M> ECHO 'bias_ci_high = 0.43442757885046335'.
bias_ci_high = 0.43442757885046335
1140 0 ECHO 'bias_ci_low = 0.23737519464722542'.
1140 0 M> ECHO 'bias_ci_low = 0.23737519464722542'.
bias_ci_low = 0.23737519464722542
1141 0 ECHO 'limit_standard_error = 0.08579517243919689'.
1141 0 M> ECHO 'limit_standard_error = 0.08579517243919689'.
limit_standard_error = 0.08579517243919689
1142 0 ECHO 'lower_limit = -2.169458382862478'.
1142 0 M> ECHO 'lower_limit = -2.169458382862478'.
lower_limit = -2.169458382862478
1143 0 ECHO 'mean_bias = 0.3359013867488444'.
1143 0 M> ECHO 'mean_bias = 0.3359013867488444'.
mean_bias = 0.3359013867488444
```

Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics

```
1144 0 ECHO 'n_pairs = 649'.
1144 0 M> ECHO 'n_pairs = 649'.
n_pairs = 649
1145 0 ECHO 'upper_limit = 2.8412611563601664'.
1145 0 M> ECHO 'upper_limit = 2.8412611563601664'.
upper_limit = 2.8412611563601664
1146 0 ECHO 'bias_ci_high = 0.43442757885046335'.
1146 0 M> ECHO 'bias_ci_high = 0.43442757885046335'.
bias_ci_high = 0.43442757885046335
1147 0 ECHO 'bias_ci_low = 0.23737519464722542'.
1147 0 M> ECHO 'bias_ci_low = 0.23737519464722542'.
bias_ci_low = 0.23737519464722542
1148 0 ECHO 'limit_standard_error = 0.08579517243919689'.
1148 0 M> ECHO 'limit_standard_error = 0.08579517243919689'.
limit_standard_error = 0.08579517243919689
1149 0 ECHO 'lower_limit = -2.169458382862478'.
1149 0 M> ECHO 'lower_limit = -2.169458382862478'.
lower_limit = -2.169458382862478
1150 0 ECHO 'mean_bias = 0.3359013867488444'.
1150 0 M> ECHO 'mean_bias = 0.3359013867488444'.
mean_bias = 0.3359013867488444
1151 0 ECHO 'n_pairs = 649'.
1151 0 M> ECHO 'n_pairs = 649'.
n_pairs = 649
1152 0 ECHO 'upper_limit = 2.8412611563601664'.
1152 0 M> ECHO 'upper_limit = 2.8412611563601664'.
upper_limit = 2.8412611563601664
1153 0 ECHO 'Cross-check status: pass'.
1153 0 M> ECHO 'Cross-check status: pass'.
Cross-check status: pass
1154 0 ECHO '=====
====='.
1154 0 M> ECHO '=====
====='.
=====
1155 0
1155 0 M>
1156 0 OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tes
ts\Limits of Agreement\SPSS_Output\spv\limits-of-agree
```

Limits of Agreement With Confidence Intervals
G3 minus G2 limits and uncertainty diagnostics

```
ment_spss_output.spv'.  
1156 0 M> OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement  
Tests\Limits of Agreement\SPSS_Output\spv\limits-of-ag  
reement_spss_output.spv'.  
1157 0 OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRI  
NTSETTING  
1157 0 M> OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=  
PRINTSETTING
```