

```
36 0 OUTPUT ACTIVATE InterRaterReliabilityOutput.  
36 0 M> OUTPUT ACTIVATE InterRaterReliabilityOutput.  
37 0 TITLE 'Inter-Rater Reliability ICC(2,1)'.  
37 0 M> TITLE 'Inter-Rater Reliability ICC(2,1)'.
```

Inter-Rater Reliability ICC(2,1)

```

38 0
38 0 M>
39 0 GET DATA
39 0 M> GET DATA
40 0 /TYPE=TXT
40 0 M> /TYPE=TXT
41 0 /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Inter Rater Reliability\dataset.csv'
41 0 M> /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Inter Rater Reliability\dataset.csv'
42 0 /ENCODING='UTF8'
42 0 M> /ENCODING='UTF8'
43 0 /DELCASE=LINE
43 0 M> /DELCASE=LINE
44 0 /DELIMITERS=', '
44 0 M> /DELIMITERS=', '
45 0 /QUALIFIER='''
45 0 M> /QUALIFIER='''
46 0 /ARRANGEMENT=DELIMITED
46 0 M> /ARRANGEMENT=DELIMITED
47 0 /FIRSTCASE=2
47 0 M> /FIRSTCASE=2
48 0 /VARIABLES=
48 0 M> /VARIABLES=
49 0 school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
49 0 M> school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
50 0 Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
50 0 M> Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
51 0 traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 famsup
A8
51 0 M> traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 famsup
up A8
52 0 paid A8 activities A8 nursery A8 higher A8 internet A8 romantic A
8
52 0 M> paid A8 activities A8 nursery A8 higher A8 internet A8 romanti
c A8
53 0 famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F
8.0

```

Inter-Rater Reliability ICC(2,1)

```

53 0 M>      famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F8.0
54 0      absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
54 0 M>      absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
55 0 DATASET NAME InterRaterReliabilityData.
55 0 M> DATASET NAME InterRaterReliabilityData.
56 0 EXECUTE.
56 0 M> EXECUTE.
57 0
57 0 M>
58 0 COMPUTE subject_id=$CASENUM.
58 0 M> COMPUTE subject_id=$CASENUM.
59 0 COMPUTE Dalc_R=6-Dalc.
59 0 M> COMPUTE Dalc_R=6-Dalc.
60 0 COMPUTE Walc_R=6-Walc.
60 0 M> COMPUTE Walc_R=6-Walc.
61 0 RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
61 0 M> RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
62 0 INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
62 0 M> INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
63 0 RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
63 0 M> RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
64 0 INTO G1_cat3 G2_cat3 G3_cat3.
64 0 M> INTO G1_cat3 G2_cat3 G3_cat3.
65 0 RECODE G1 G3 (LO THRU 8=1) (9 THRU 10=2) (11 THRU 12=3) (13 THRU 14=4) (15 THRU HI=5)
65 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)
66 0 INTO G1_cat5 G3_cat5.
66 0 M> INTO G1_cat5 G3_cat5.
67 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).
67 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).

```

Inter-Rater Reliability ICC(2,1)

```
68 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).
68 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).
69 0 EXECUTE.
69 0 M> EXECUTE.
70 0
70 0 M>
71 0 * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
71 0 M> * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
72 0 TITLE 'Inter Rater Reliability ICC Two One'.
72 0 M> TITLE 'Inter Rater Reliability ICC Two One'.
```

Inter Rater Reliability ICC Two One

```
73 0 SUBTITLE 'Two-way random single-measure absolute agreement across G1  
G2 and G3'.
```

```
73 0 M> SUBTITLE 'Two-way random single-measure absolute agreement across  
G1 G2 and G3'.
```

```
>Warning # 2004 on line 73. Command name: SUBTITLE
```

```
>The subtitle given exceeds 60 characters in length. The first 60 characters  
>will be used.
```

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G

```

74  0  RELIABILITY /VARIABLES=G1 G2 G3 /SCALE('Random raters') ALL /MODEL=ALPHA
74  0  M> RELIABILITY /VARIABLES=G1 G2 G3 /SCALE('Random raters') ALL /MODEL=ALPHA
75  0  /STATISTICS=DESCRIPTIVE SCALE CORR /SUMMARY=TOTAL
75  0  M> /STATISTICS=DESCRIPTIVE SCALE CORR /SUMMARY=TOTAL
76  0  /ICC=MODEL(RANDOM) TYPE(ABSOLUTE) CIN=95 TESTVAL=0.
76  0  M> /ICC=MODEL(RANDOM) TYPE(ABSOLUTE) CIN=95 TESTVAL=0.

```

Reliability

Notes

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

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G

Notes

Syntax		RELIABILITY /VARIABLES=G1 G2 G3 /SCALE('Random raters') ALL /MODEL=ALPHA /STATISTICS=DESCRIPT IVE SCALE CORR /SUMMARY=TOTAL /ICC=MODEL(RANDOM) TYPE(ABSOLUTE) CIN=95 TESTVAL=0.
Resources	Processor Time	00:00:00.13
	Elapsed Time	00:00:00.15

[InterRaterReliabilityData]

Scale: Random raters

Case Processing Summary

		N	%
Cases	Valid	649	100.0
	Excluded ^a	0	.0
	Total	649	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.951	.953	3

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G

Item Statistics

	Mean	Std. Deviation	N
G1	11.40	2.745	649
G2	11.57	2.914	649
G3	11.91	3.231	649

Inter-Item Correlation Matrix

	G1	G2	G3
G1	1.000	.865	.826
G2	.865	1.000	.919
G3	.826	.919	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
G1	23.48	36.219	.862	.755	.955
G2	23.31	32.632	.935	.879	.898
G3	22.97	29.863	.905	.848	.927

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
34.88	72.251	8.500	3

Intraclass Correlation Coefficient

	Intraclass Correlation ^b	95% Confidence Interval		F Test with True Value 0		
		Lower Bound	Upper Bound	Value	df1	df2
Single Measures	.859 ^a	.836	.878	20.246	648	1296
Average Measures	.948	.939	.956	20.246	648	1296

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G

Intraclass Correlation Coefficient

	F Test with ..
	Sig
Single Measures	.000
Average Measures	.000

Two-way random effects model where both people effects and measures effects are random.

- a. The estimator is the same, whether the interaction effect is present or not.
- b. Type A intraclass correlation coefficients using an absolute agreement definition.

```
77 0 MEANS TABLES=G1 G2 G3 /CELLS=COUNT MEAN STDDEV MIN MAX.
77 0 M> MEANS TABLES=G1 G2 G3 /CELLS=COUNT MEAN STDDEV MIN MAX.
```

Means

Notes

Output Created		16-JUL-2026 21:12:21
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Inter Rater Reliability\dataset.csv
	Active Dataset	InterRaterReliabilityData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	For each dependent variable in a table, user-defined missing values for the dependent and all grouping variables are treated as missing.
	Cases Used	Cases used for each table have no missing values in any independent variable, and not all dependent variables have missing values.

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G

Notes

Syntax	MEANS TABLES=G1 G2 G3 /CELLS=COUNT MEAN STDDEV MIN ...	
Resources	Processor Time	00:00:00.08
	Elapsed Time	00:00:00.18

Case Processing Summary

	Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
G1	649	100.0%	0	0.0%	649	100.0%
G2	649	100.0%	0	0.0%	649	100.0%
G3	649	100.0%	0	0.0%	649	100.0%

Report

	G1	G2	G3
N	649	649	649
Mean	11.40	11.57	11.91
Std. Deviation	2.745	2.914	3.231
Minimum	0	0	0
Maximum	19	19	19

78 0 CORRELATIONS /VARIABLES=G1 G2 G3 /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.

78 0 M> CORRELATIONS /VARIABLES=G1 G2 G3 /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.

Correlations

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G

Notes

Output Created		16-JUL-2026 21:12:21
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Inter Rater Reliability\dataset.csv
	Active Dataset	InterRaterReliabilityData
	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.
Syntax		CORRELATIONS /VARIABLES=G1 G2 G3 /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.14

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G

Correlations

		G1	G2	G3
G1	Pearson Correlation	1	.865**	.826**
	Sig. (2-tailed)		.000	.000
	N	649	649	649
G2	Pearson Correlation	.865**	1	.919**
	Sig. (2-tailed)	.000		.000
	N	649	649	649
G3	Pearson Correlation	.826**	.919**	1
	Sig. (2-tailed)	.000	.000	
	N	649	649	649

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

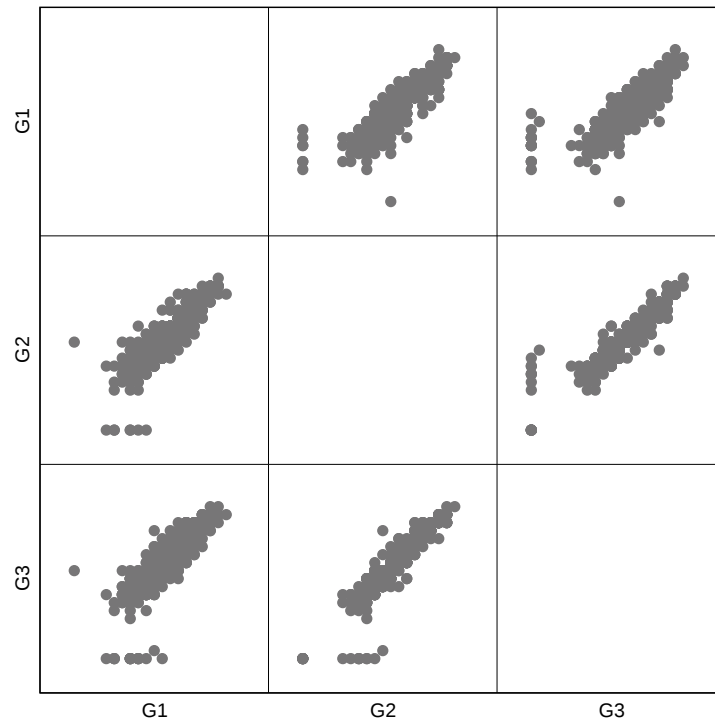
```
79 0 GRAPH /SCATTERPLOT(MATRIX)=G1 G2 G3 .
79 0 M> GRAPH /SCATTERPLOT(MATRIX)=G1 G2 G3 .
```

Graph

Notes

Output Created		16-JUL-2026 21:12:21
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Inter Rater Reliability\dataset.csv
	Active Dataset	InterRaterReliabilityData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /SCATTERPLOT (MATRIX)=G1 G2 G3.
Resources	Processor Time	00:00:05.52
	Elapsed Time	00:00:02.74

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G



```

80 0 * END METHOD-SPECIFIC SPSS WORKFLOW.
80 0 M> * END METHOD-SPECIFIC SPSS WORKFLOW.
81 0
81 0 M>
82 0 SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Inter Rater Reliability\SPSS_Output\sav\inter-rater-reliability_spss_ready_data.sav' /COMPRESSED.
82 0 M> SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Inter Rater Reliability\SPSS_Output\sav\inter-rater-reliability_spss_ready_data.sav' /COMPRESSED.
83 0
83 0 M>
84 0 ECHO '=====
====='.
84 0 M> ECHO '=====
====='.
=====
85 0 ECHO 'INTER-RATER RELIABILITY ICC(2,1)'.
85 0 M> ECHO 'INTER-RATER RELIABILITY ICC(2,1)'.
INTER-RATER RELIABILITY ICC(2,1)

```

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G

```
86 0 ECHO 'Design: Two-way random-effects absolute agreement for one randomly selected grader among G1, G2, and G3.'.
86 0 M> ECHO 'Design: Two-way random-effects absolute agreement for one randomly selected grader among G1, G2, and G3.'.
Design: Two-way random-effects absolute agreement for one randomly selected grader among G1, G2, and G3.
87 0 ECHO 'Null hypothesis: The single-rater absolute-agreement ICC is zero.'.
87 0 M> ECHO 'Null hypothesis: The single-rater absolute-agreement ICC is zero.'.
Null hypothesis: The single-rater absolute-agreement ICC is zero.
88 0 ECHO 'Formula:  $ICC(2,1) = (MSR - MSE) / [MSR + (k-1)MSE + k(MSC - MSE)/n]$ .'.
88 0 M> ECHO 'Formula:  $ICC(2,1) = (MSR - MSE) / [MSR + (k-1)MSE + k(MSC - MSE)/n]$ .'.
Formula:  $ICC(2,1) = (MSR - MSE) / [MSR + (k-1)MSE + k(MSC - MSE)/n]$ .
89 0 ECHO 'Variables: G1, G2, G3'.
89 0 M> ECHO 'Variables: G1, G2, G3'.
Variables: G1, G2, G3
90 0 ECHO 'Rows analyzed: 649'.
90 0 M> ECHO 'Rows analyzed: 649'.
Rows analyzed: 649
91 0 ECHO 'f_statistic = 20.245973021325074'.
91 0 M> ECHO 'f_statistic = 20.245973021325074'.
f_statistic = 20.245973021325074
92 0 ECHO 'icc_2_1 = 0.858846839218952'.
92 0 M> ECHO 'icc_2_1 = 0.858846839218952'.
icc_2_1 = 0.858846839218952
93 0 ECHO 'p_value = 0.0'.
93 0 M> ECHO 'p_value = 0.0'.
p_value = 0.0
94 0 ECHO 'raters = 3'.
94 0 M> ECHO 'raters = 3'.
raters = 3
95 0 ECHO 'targets = 649'.
95 0 M> ECHO 'targets = 649'.
targets = 649
96 0 ECHO 'f_statistic = 20.245973021325074'.
96 0 M> ECHO 'f_statistic = 20.245973021325074'.
f_statistic = 20.245973021325074
97 0 ECHO 'icc_2_1 = 0.858846839218952'.
```

Inter Rater Reliability ICC Two One
Two-way random single-measure absolute agreement across G1 G

```

  97  0 M> ECHO 'icc_2_1 = 0.858846839218952'.
icc_2_1 = 0.858846839218952
  98  0 ECHO 'p_value = 0.0'.
  98  0 M> ECHO 'p_value = 0.0'.
p_value = 0.0
  99  0 ECHO 'raters = 3'.
  99  0 M> ECHO 'raters = 3'.
raters = 3
 100  0 ECHO 'targets = 649'.
 100  0 M> ECHO 'targets = 649'.
targets = 649
 101  0 ECHO 'Cross-check status: pass'.
 101  0 M> ECHO 'Cross-check status: pass'.
Cross-check status: pass
 102  0 ECHO '=====
====='.
 102  0 M> ECHO '=====
====='.
=====
 103  0
 103  0 M>
 104  0 OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tes
ts\Inter Rater Reliability\SPSS_Output\spv\inter-rater
-reliability_spss_output.spv'.
 104  0 M> OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement
Tests\Inter Rater Reliability\SPSS_Output\spv\inter-ra
ter-reliability_spss_output.spv'.
 105  0 OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRI
NTSETTING
 105  0 M> OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=
PRINTSETTING
```