

```
1410 0 OUTPUT ACTIVATE ReliabilityAnalysisinSPSSOutput.  
1410 0 M> OUTPUT ACTIVATE ReliabilityAnalysisinSPSSOutput.  
1411 0 TITLE 'SPSS-Style Grade Reliability Diagnostics'.  
1411 0 M> TITLE 'SPSS-Style Grade Reliability Diagnostics'.
```

SPSS-Style Grade Reliability Diagnostics

```

1412 0
1412 0 M>
1413 0 GET DATA
1413 0 M> GET DATA
1414 0 /TYPE=TXT
1414 0 M> /TYPE=TXT
1415 0 /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Reliability Analysis in SPSS\dataset.csv'
1415 0 M> /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Reliability Analysis in SPSS\dataset.csv'
1416 0 /ENCODING='UTF8'
1416 0 M> /ENCODING='UTF8'
1417 0 /DELCASE=LINE
1417 0 M> /DELCASE=LINE
1418 0 /DELIMITERS=', '
1418 0 M> /DELIMITERS=', '
1419 0 /QUALIFIER='"'
1419 0 M> /QUALIFIER='"'
1420 0 /ARRANGEMENT=DELIMITED
1420 0 M> /ARRANGEMENT=DELIMITED
1421 0 /FIRSTCASE=2
1421 0 M> /FIRSTCASE=2
1422 0 /VARIABLES=
1422 0 M> /VARIABLES=
1423 0 school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
1423 0 M> school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
1424 0 Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
1424 0 M> Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
1425 0 traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 famsup
A8
1425 0 M> traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 famsup
up A8
1426 0 paid A8 activities A8 nursery A8 higher A8 internet A8 romantic A
8
1426 0 M> paid A8 activities A8 nursery A8 higher A8 internet A8 romanti
c A8
1427 0 famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F
8.0

```

SPSS-Style Grade Reliability Diagnostics

```

1427 0 M>      famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F8.0
1428 0      absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
1428 0 M>      absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
1429 0 DATASET NAME ReliabilityAnalysisinSPSSData.
1429 0 M> DATASET NAME ReliabilityAnalysisinSPSSData.
1430 0 EXECUTE.
1430 0 M> EXECUTE.
1431 0
1431 0 M>
1432 0 COMPUTE subject_id=$CASENUM.
1432 0 M> COMPUTE subject_id=$CASENUM.
1433 0 COMPUTE Dalc_R=6-Dalc.
1433 0 M> COMPUTE Dalc_R=6-Dalc.
1434 0 COMPUTE Walc_R=6-Walc.
1434 0 M> COMPUTE Walc_R=6-Walc.
1435 0 RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
1435 0 M> RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
1436 0 INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
1436 0 M> INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
1437 0 RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
1437 0 M> RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
1438 0 INTO G1_cat3 G2_cat3 G3_cat3.
1438 0 M> INTO G1_cat3 G2_cat3 G3_cat3.
1439 0 RECODE G1 G3 (LO THRU 8=1) (9 THRU 10=2) (11 THRU 12=3) (13 THRU 14=4) (15 THRU HI=5)
1439 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)
1440 0 INTO G1_cat5 G3_cat5.
1440 0 M> INTO G1_cat5 G3_cat5.
1441 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).
1441 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).

```

SPSS-Style Grade Reliability Diagnostics

```
1442  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).
1442  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).
1443  0  EXECUTE.
1443  0 M> EXECUTE.
1444  0
1444  0 M>
1445  0  * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
1445  0 M> * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
1446  0  TITLE 'Reliability Analysis in SPSS'.
1446  0 M> TITLE 'Reliability Analysis in SPSS'.
```

Reliability Analysis in SPSS

```
1447  0  SUBTITLE 'Raw three-grade alpha with corrected item-total and alpha-i  
f-deleted diagnostics'.
```

```
1447  0 M> SUBTITLE 'Raw three-grade alpha with corrected item-total and alph  
a-if-deleted diagnostics'.
```

```
>Warning # 2004 on line 1447.  Command name: SUBTITLE
```

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

Reliability Analysis in SPSS

Raw three-grade alpha with corrected item-total and alpha-if

```
1448 0 RELIABILITY /VARIABLES=G1 G2 G3 /SCALE('SPSS raw grade scale') ALL /MODEL=ALPHA
1448 0 M> RELIABILITY /VARIABLES=G1 G2 G3 /SCALE('SPSS raw grade scale') ALL /MODEL=ALPHA
1449 0 /STATISTICS=DESCRIPTIVE SCALE CORR COV /SUMMARY=TOTAL MEANS VARIANCE COV CORR.
1449 0 M> /STATISTICS=DESCRIPTIVE SCALE CORR COV /SUMMARY=TOTAL MEANS VARIANCE COV CORR.
```

Reliability

Notes

Output Created		16-JUL-2026 21:10:32
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Reliability Analysis in SPSS\dataset.csv
	Active Dataset	ReliabilityAnalysisinSPSS Data
	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\Reliability Analysis in SPSS\reliability_analysis_in_spss_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.

Reliability Analysis in SPSS
Raw three-grade alpha with corrected item-total and alpha-if

Notes

Syntax		RELIABILITY /VARIABLES=G1 G2 G3 /SCALE('SPSS raw grade scale') ALL /MODEL=ALPHA /STATISTICS=DESCRIPTIVE SCALE CORR COV /SUMMARY=TOTAL MEANS VARIANCE COV CORR.
Resources	Processor Time	00:00:00.09
	Elapsed Time	00:00:00.08

[ReliabilityAnalysisinSPSSData]

Scale: SPSS raw grade scale

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

Reliability Analysis in SPSS
Raw three-grade alpha with corrected item-total and alpha-if

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

Inter-Item Covariance Matrix

	G1	G2	G3
G1	7.536	6.919	7.329
G2	6.919	8.489	8.646
G3	7.329	8.646	10.437

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Item Means	11.625	11.399	11.906	.507	1.044	.067
Item Variances	8.821	7.536	10.437	2.901	1.385	2.186
Inter-Item Covariances	7.631	6.919	8.646	1.728	1.250	.652
Inter-Item Correlations	.870	.826	.919	.092	1.112	.002

Summary Item Statistics

	N of Items
Item Means	3
Item Variances	3
Inter-Item Covariances	3
Inter-Item Correlations	3

Reliability Analysis in SPSS
Raw three-grade alpha with corrected item-total and alpha-if

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

1450 0 CORRELATIONS /VARIABLES=G1 G2 G3 /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.

1450 0 M> CORRELATIONS /VARIABLES=G1 G2 G3 /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.

Correlations

Reliability Analysis in SPSS
Raw three-grade alpha with corrected item-total and alpha-if

Notes

Output Created		16-JUL-2026 21:10:33
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Reliability Analysis in SPSS\dataset.csv
	Active Dataset	ReliabilityAnalysisinSPSS 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 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	00:00:00.13
	Elapsed Time	00:00:00.09

Reliability Analysis in SPSS
Raw three-grade alpha with corrected item-total and alpha-if

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).

```
1451 0 MEANS TABLES=G1 G2 G3 /CELLS=COUNT MEAN STDDEV VARIANCE MIN MAX.
1451 0 M> MEANS TABLES=G1 G2 G3 /CELLS=COUNT MEAN STDDEV VARIANCE MIN MAX.
```

Means

Reliability Analysis in SPSS
Raw three-grade alpha with corrected item-total and alpha-if

Notes

Output Created		16-JUL-2026 21:10:33
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Reliability Analysis in SPSS\dataset.csv
	Active Dataset	ReliabilityAnalysisinSPSS Data
	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.
Syntax		MEANS TABLES=G1 G2 G3 /CELLS=COUNT MEAN STDDEV VARIANCE MIN MAX.
Resources	Processor Time	00:00:00.11
	Elapsed Time	00:00:00.09

Case Processing Summary

	Included		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%

Reliability Analysis in SPSS
Raw three-grade alpha with corrected item-total and alpha-if

Report

	G1	G2	G3
N	649	649	649
Mean	11.40	11.57	11.91
Std. Deviation	2.745	2.914	3.231
Variance	7.536	8.489	10.437
Minimum	0	0	0
Maximum	19	19	19

1452 0 GRAPH /SCATTERPLOT(MATRIX)=G1 G2 G3.

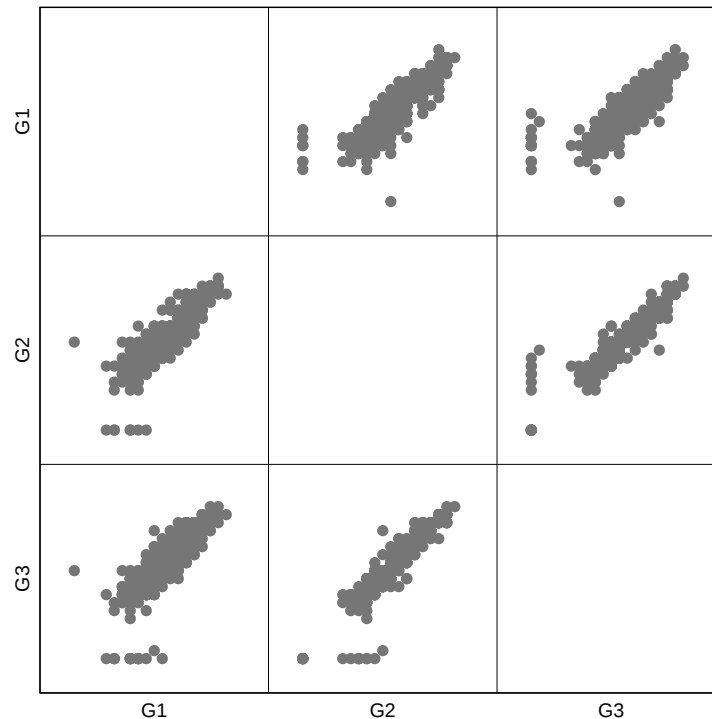
1452 0 M> GRAPH /SCATTERPLOT(MATRIX)=G1 G2 G3.

Graph

Notes

Output Created		16-JUL-2026 21:10:33
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Reliability Analysis in SPSS\dataset.csv
	Active Dataset	ReliabilityAnalysisinSPSS Data
	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	00:00:00.72
	Elapsed Time	00:00:00.67

Reliability Analysis in SPSS Raw three-grade alpha with corrected item-total and alpha-if



```

1453 0 * END METHOD-SPECIFIC SPSS WORKFLOW.
1453 0 M> * END METHOD-SPECIFIC SPSS WORKFLOW.
1454 0
1454 0 M>
1455 0 SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Reli
ability Analysis in SPSS\SPSS_Output\sav\reliability-a
nalysis-in-spss_spss_ready_data.sav' /COMPRESSED.
1455 0 M> SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\R
eliability Analysis in SPSS\SPSS_Output\sav\reliabilit
y-analysis-in-spss_spss_ready_data.sav' /COMPRESSED.

1456 0
1456 0 M>
1457 0 ECHO '=====
====='.
1457 0 M> ECHO '=====
====='.
=====
1458 0 ECHO 'SPSS-STYLE GRADE RELIABILITY DIAGNOSTICS'.
1458 0 M> ECHO 'SPSS-STYLE GRADE RELIABILITY DIAGNOSTICS'.
SPSS-STYLE GRADE RELIABILITY DIAGNOSTICS

```

Reliability Analysis in SPSS
Raw three-grade alpha with corrected item-total and alpha-if

```
1459 0 ECHO 'Design: Raw three-grade alpha with corrected grade-total correl
ations and alpha-if-deleted diagnostics.'.
1459 0 M> ECHO 'Design: Raw three-grade alpha with corrected grade-total cor
relations and alpha-if-deleted diagnostics.'.
Design: Raw three-grade alpha with corrected grade-total correlations and alph
a-if-deleted diagnostics.
1460 0 ECHO 'Null hypothesis: The longitudinal grade composite has no intern
al consistency.'.
1460 0 M> ECHO 'Null hypothesis: The longitudinal grade composite has no int
ernal consistency.'.
Null hypothesis: The longitudinal grade composite has no internal consistency.
1461 0 ECHO 'Formula: alpha uses the G1-G2-G3 covariance matrix; each deleti
on reruns alpha on the remaining pair.'.
1461 0 M> ECHO 'Formula: alpha uses the G1-G2-G3 covariance matrix; each del
etion reruns alpha on the remaining pair.'.
Formula: alpha uses the G1-G2-G3 covariance matrix; each deletion reruns alpha
on the remaining pair.
1462 0 ECHO 'Variables: G1, G2, G3'.
1462 0 M> ECHO 'Variables: G1, G2, G3'.
Variables: G1, G2, G3
1463 0 ECHO 'Rows analyzed: 649'.
1463 0 M> ECHO 'Rows analyzed: 649'.
Rows analyzed: 649
1464 0 ECHO 'cronbach_alpha = 0.9506074615951181'.
1464 0 M> ECHO 'cronbach_alpha = 0.9506074615951181'.
cronbach_alpha = 0.9506074615951181
1465 0 ECHO 'items = 3'.
1465 0 M> ECHO 'items = 3'.
items = 3
1466 0 ECHO 'maximum_alpha_if_deleted = 0.9548879880923995'.
1466 0 M> ECHO 'maximum_alpha_if_deleted = 0.9548879880923995'.
maximum_alpha_if_deleted = 0.9548879880923995
1467 0 ECHO 'minimum_alpha_if_deleted = 0.8984082037440915'.
1467 0 M> ECHO 'minimum_alpha_if_deleted = 0.8984082037440915'.
minimum_alpha_if_deleted = 0.8984082037440915
1468 0 ECHO 'n_cases = 649'.
1468 0 M> ECHO 'n_cases = 649'.
n_cases = 649
1469 0 ECHO 'cronbach_alpha = 0.9506074615951181'.
```

Reliability Analysis in SPSS
Raw three-grade alpha with corrected item-total and alpha-if

```
1469  0 M> ECHO 'cronbach_alpha = 0.9506074615951181'.
cronbach_alpha = 0.9506074615951181
1470  0 ECHO 'items = 3'.
1470  0 M> ECHO 'items = 3'.
items = 3
1471  0 ECHO 'maximum_alpha_if_deleted = 0.9548879880923995'.
1471  0 M> ECHO 'maximum_alpha_if_deleted = 0.9548879880923995'.
maximum_alpha_if_deleted = 0.9548879880923995
1472  0 ECHO 'minimum_alpha_if_deleted = 0.8984082037440915'.
1472  0 M> ECHO 'minimum_alpha_if_deleted = 0.8984082037440915'.
minimum_alpha_if_deleted = 0.8984082037440915
1473  0 ECHO 'n_cases = 649'.
1473  0 M> ECHO 'n_cases = 649'.
n_cases = 649
1474  0 ECHO 'Cross-check status: pass'.
1474  0 M> ECHO 'Cross-check status: pass'.
Cross-check status: pass
1475  0 ECHO '=====
====='.
1475  0 M> ECHO '=====
====='.
=====
1476  0
1476  0 M>
1477  0 OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Reliability Analysis in SPSS\SPSS_Output\spv\reliability-analysis-in-spss_spss_output.spv'.
1477  0 M> OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Reliability Analysis in SPSS\SPSS_Output\spv\reliability-analysis-in-spss_spss_output.spv'.
1478  0 OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
1478  0 M> OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
```