

```

* =====.
* Mauchly's Test of Sphericity - SPSS Syntax, Comma CSV Fix.
* OnlineInternetCafe.com workflow.
*
* WHY THIS VERSION:
* The last SPSS output imported the file, but G1, G2 and G3 had 0 valid cases.
* That normally happens when the CSV delimiter is wrong.
* Your current CSV appears to be comma-separated, so this syntax uses:
* /DELIMITERS=", "
*
* Folder:
* D:\low kda score priority basis posts\first post\Mauchly Test of Sphericity
* =====.

```

```

SET UNICODE=ON.
SET DECIMAL=DOT.
SET PRINTBACK=ON.

```

```

* -----.
* 1. Create SPSS output folder.
* -----.
HOST COMMAND=['cmd /c if not exist "D:\low kda score priority basis posts\first post\Mauchly Test of Sphericity\SPSS" mkdir "D:\low kda score priority basis posts\first post\Mauchly Test of Sphericity\SPSS"'].

```

Host

```

[MauchlyData] D:\low kda score priority basis posts\first post\Mauchly Test of Sphericity\SPSS\Mauchlys-Test-of-Sphericity-SPSS-working-file-comma-fixed.sav

```

```

* -----.
* 2. Import comma-separated student-por.csv.
* -----.
GET DATA
  /TYPE=TXT
  /FILE='D:\low kda score priority basis posts\first post\Mauchly Test of Sphericity\student-por.csv'
  /ENCODING='UTF8'
  /DELCASE=LINE
  /DELIMITERS=", "
  /QUALIFIER=' "'

```

```
/ARRANGEMENT=DELIMITED
/FIRSTCASE=2
/DATATYPEMIN PERCENTAGE=95.0
/IMPORTCASE=ALL
/VARIABLES=
  school A40
  sex A20
  age F8.0
  address A20
  famsize A20
  Pstatus A20
  Medu F8.0
  Fedu F8.0
  Mjob A40
  Fjob A40
  reason A40
  guardian A40
  traveltime F8.0
  studytime F8.0
  failures F8.0
  schoolsup A40
  famsup A40
  paid A40
  activities A40
  nursery A40
  higher A40
  internet A40
  romantic A40
  famrel F8.0
  freetime F8.0
  goout F8.0
  Dalc F8.0
  Walc F8.0
  health F8.0
  absences F8.0
  G1 F8.0
  G2 F8.0
  G3 F8.0.
CACHE.
EXECUTE.

DATASET NAME MauchlyData WINDOW=FRONT.
```

Dataset Name

Warnings

The active dataset will replace the existing dataset named
MauchlyData.

```
* -----.  
* 3. Add subject ID and labels.  
* -----.  
COMPUTE subject_id = $CASENUM.  
EXECUTE.  
  
VARIABLE LABELS  
  subject_id "Subject ID"  
  G1 "First grade measurement"  
  G2 "Second grade measurement"  
  G3 "Final grade measurement".  
  
FORMATS subject_id age Medu Fedu traveltime studytime failures famrel freetime  
  goout Dalc Walc health absences G1 G2 G3 (F8.0).  
  
* Make sure G1 G2 G3 are numeric and valid.  
EXECUTE.  
  
* -----.  
* 4. Dataset checks.  
* -----.  
DISPLAY DICTIONARY.
```

File Information

Variable Information

Variable	Position	Label	Measurement Level	Role	Column Width	Alignment
school	1	<none>	Nominal	Input	40	Left
sex	2	<none>	Nominal	Input	20	Left
age	3	<none>	Scale	Input	8	Right
address	4	<none>	Nominal	Input	20	Left
famsize	5	<none>	Nominal	Input	20	Left
Pstatus	6	<none>	Nominal	Input	20	Left
Medu	7	<none>	Nominal	Input	8	Right
Fedu	8	<none>	Nominal	Input	8	Right
Mjob	9	<none>	Nominal	Input	40	Left
Fjob	10	<none>	Nominal	Input	40	Left
reason	11	<none>	Nominal	Input	40	Left
guardian	12	<none>	Nominal	Input	40	Left
traveltime	13	<none>	Nominal	Input	8	Right
studytime	14	<none>	Nominal	Input	8	Right
failures	15	<none>	Nominal	Input	8	Right
schoolsup	16	<none>	Nominal	Input	40	Left
famsup	17	<none>	Nominal	Input	40	Left
paid	18	<none>	Nominal	Input	40	Left
activities	19	<none>	Nominal	Input	40	Left
nursery	20	<none>	Nominal	Input	40	Left
higher	21	<none>	Nominal	Input	40	Left
internet	22	<none>	Nominal	Input	40	Left
romantic	23	<none>	Nominal	Input	40	Left
famrel	24	<none>	Nominal	Input	8	Right
freetime	25	<none>	Nominal	Input	8	Right
goout	26	<none>	Nominal	Input	8	Right
Dalc	27	<none>	Nominal	Input	8	Right
Walc	28	<none>	Nominal	Input	8	Right
health	29	<none>	Nominal	Input	8	Right
absences	30	<none>	Scale	Input	8	Right
G1	31	First grade measurement	Nominal	Input	8	Right

Variable Information

Variable	Print Format	Write Format
school	A40	A40
sex	A20	A20
age	F8	F8
address	A20	A20
famsize	A20	A20
Pstatus	A20	A20
Medu	F8	F8
Fedu	F8	F8
Mjob	A40	A40
Fjob	A40	A40
reason	A40	A40
guardian	A40	A40
traveltime	F8	F8
studytime	F8	F8
failures	F8	F8
schoolsup	A40	A40
famsup	A40	A40
paid	A40	A40
activities	A40	A40
nursery	A40	A40
higher	A40	A40
internet	A40	A40
romantic	A40	A40
famrel	F8	F8
freetime	F8	F8
goout	F8	F8
Dalc	F8	F8
Walc	F8	F8
health	F8	F8
absences	F8	F8
G1	F8	F8

Variable Information

Variable	Position	Label	Measurement Level	Role	Column Width	Alignment
G2	32	Second grade measurement	Nominal	Input	8	Right
G3	33	Final grade measurement	Nominal	Input	8	Right
subject_id	34	Subject ID	Scale	Input	12	Right

Variable Information

Variable	Print Format	Write Format
G2	F8	F8
G3	F8	F8
subject_id	F8	F8

Variables in the working file

```
FREQUENCIES VARIABLES=G1 G2 G3
/ORDER=ANALYSIS.
```

Frequencies

Statistics

		First grade measurement	Second grade measurement	Final grade measurement
N	Valid	649	649	649
	Missing	0	0	0

Frequency Table

First grade measurement

		Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	0	1	.2	.2	.2	
	4	2	.3	.3	.5	
	5	5	.8	.8	1.2	
	6	9	1.4	1.4	2.6	
	7	33	5.1	5.1	7.7	
	8	42	6.5	6.5	14.2	
	9	65	10.0	10.0	24.2	
	10	95	14.6	14.6	38.8	
	11	91	14.0	14.0	52.9	
	12	82	12.6	12.6	65.5	
	13	72	11.1	11.1	76.6	
	14	71	10.9	10.9	87.5	
	15	35	5.4	5.4	92.9	
	16	22	3.4	3.4	96.3	
	17	16	2.5	2.5	98.8	
	18	7	1.1	1.1	99.8	
	19	1	.2	.2	100.0	
		Total	649	100.0	100.0	

Second grade measurement

		Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	0	7	1.1	1.1	1.1	
	5	3	.5	.5	1.5	
	6	7	1.1	1.1	2.6	
	7	16	2.5	2.5	5.1	
	8	40	6.2	6.2	11.2	
	9	72	11.1	11.1	22.3	
	10	83	12.8	12.8	35.1	
	11	103	15.9	15.9	51.0	
	12	86	13.3	13.3	64.3	
	13	80	12.3	12.3	76.6	
	14	54	8.3	8.3	84.9	
	15	38	5.9	5.9	90.8	
	16	25	3.9	3.9	94.6	
	17	20	3.1	3.1	97.7	
	18	14	2.2	2.2	99.8	
	19	1	.2	.2	100.0	
	Total		649	100.0	100.0	

Final grade measurement

		Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	0	15	2.3	2.3	2.3	
	1	1	.2	.2	2.5	
	5	1	.2	.2	2.6	
	6	3	.5	.5	3.1	
	7	10	1.5	1.5	4.6	
	8	35	5.4	5.4	10.0	
	9	35	5.4	5.4	15.4	
	10	97	14.9	14.9	30.4	
	11	104	16.0	16.0	46.4	
	12	72	11.1	11.1	57.5	
	13	82	12.6	12.6	70.1	
	14	63	9.7	9.7	79.8	
	15	49	7.6	7.6	87.4	
	16	36	5.5	5.5	92.9	
	17	29	4.5	4.5	97.4	
	18	15	2.3	2.3	99.7	
	19	2	.3	.3	100.0	
	Total		649	100.0	100.0	

```
DESCRIPTIVES VARIABLES=G1 G2 G3
  /STATISTICS=MEAN STDDEV MIN MAX.
```

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
First grade measurement	649	0	19	11.40	2.745
Second grade measurement	649	0	19	11.57	2.914
Final grade measurement	649	0	19	11.91	3.231
Valid N (listwise)	649				

- * Expected descriptives:
- * G1 mean around 11.399
- * G2 mean around 11.570
- * G3 mean around 11.906

* Valid N should be 649 for all three variables.

* -----.
* 5. Pairwise difference scores for sphericity explanation.
* -----.

```
COMPUTE diff_G2_G1 = G2 - G1.  
COMPUTE diff_G3_G2 = G3 - G2.  
COMPUTE diff_G3_G1 = G3 - G1.  
EXECUTE.
```

VARIABLE LABELS

```
diff_G2_G1 "Difference score: G2 minus G1"  
diff_G3_G2 "Difference score: G3 minus G2"  
diff_G3_G1 "Difference score: G3 minus G1".
```

```
DESCRIPTIVES VARIABLES=diff_G2_G1 diff_G3_G2 diff_G3_G1  
/STATISTICS=MEAN STDDEV VARIANCE MIN MAX.
```

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Difference score: G2 minus G1	649	-9.00	11.00	.1710	1.47929	2.188
Difference score: G3 minus G2	649	-9.00	6.00	.3359	1.27824	1.634
Difference score: G3 minus G1	649	-11.00	11.00	.5069	1.82076	3.315
Valid N (listwise)	649					

* Expected variances:
* G2 - G1 around 2.188
* G3 - G2 around 1.634
* G3 - G1 around 3.315.

* -----.
* 6. Repeated-measures ANOVA.
* This produces Mauchly's Test of Sphericity.
* -----.

```
GLM G1 G2 G3  
/WSFACTOR=GradeTime 3 Polynomial  
/MEASURE=Grade
```

```

/METHOD=SSTYPE(3)
/PRINT=DESCRIPTIVE ETASQ
/CRITERIA=ALPHA(.05)
/WSDESIGN=GradeTime.

```

General Linear Model

Within-Subjects Factors

Measure: Grade

GradeTime	Dependent Variable
1	G1
2	G2
3	G3

Descriptive Statistics

	Mean	Std. Deviation	N
First grade measurement	11.40	2.745	649
Second grade measurement	11.57	2.914	649
Final grade measurement	11.91	3.231	649

Multivariate Tests^a

Effect		Value	F	Hypothesis df	Error df	Sig.
GradeTime	Pillai's Trace	.085	29.882 ^b	2.000	647.000	.000
	Wilks' Lambda	.915	29.882 ^b	2.000	647.000	.000
	Hotelling's Trace	.092	29.882 ^b	2.000	647.000	.000
	Roy's Largest Root	.092	29.882 ^b	2.000	647.000	.000

Multivariate Tests^a

Effect		Partial Eta Squared
GradeTime	Pillai's Trace	.085
	Wilks' Lambda	.085
	Hotelling's Trace	.085
	Roy's Largest Root	.085

- a. Design: Intercept
Within Subjects Design: GradeTime
- b. Exact statistic

Mauchly's Test of Sphericity^a

Measure: Grade

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b
					Greenhouse-Geisser
GradeTime	.827	122.814	2	.000	.853

Mauchly's Test of Sphericity^a

Measure: Grade

Within Subjects Effect	Epsilon ^b	
	Huynh-Feldt	Lower-bound
GradeTime	.855	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

- a. Design: Intercept
Within Subjects Design: GradeTime
- b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Measure: Grade

Source		Type III Sum of Squares	df	Mean Square	F
GradeTime	Sphericity Assumed	86.331	2	43.165	36.287
	Greenhouse-Geisser	86.331	1.705	50.628	36.287
	Huynh-Feldt	86.331	1.709	50.509	36.287
	Lower-bound	86.331	1.000	86.331	36.287
Error(GradeTime)	Sphericity Assumed	1541.669	1296	1.190	
	Greenhouse-Geisser	1541.669	1104.961	1.395	
	Huynh-Feldt	1541.669	1107.581	1.392	
	Lower-bound	1541.669	648.000	2.379	

Tests of Within-Subjects Effects

Measure: Grade

Source		Sig.	Partial Eta Squared
GradeTime	Sphericity Assumed	.000	.053
	Greenhouse-Geisser	.000	.053
	Huynh-Feldt	.000	.053
	Lower-bound	.000	.053
Error(GradeTime)	Sphericity Assumed		
	Greenhouse-Geisser		
	Huynh-Feldt		
	Lower-bound		

Tests of Within-Subjects Contrasts

Measure: Grade

Source	GradeTime	Type III Sum of Squares	df	Mean Square	F	Sig.
GradeTime	Linear	83.391	1	83.391	50.309	.000
	Quadratic	2.940	1	2.940	4.075	.044
Error(GradeTime)	Linear	1074.109	648	1.658		
	Quadratic	467.560	648	.722		

Tests of Within-Subjects Contrasts

Measure: Grade

Source	GradeTime	Partial Eta Squared
GradeTime	Linear	.072
	Quadratic	.006
Error(GradeTime)	Linear	
	Quadratic	

Tests of Between-Subjects Effects

Measure: Grade

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	263121.703	1	263121.703	10925.261	.000	.944
Error	15606.297	648	24.084			

* Expected key table:
 * Mauchly's Test of Sphericity:
 * W around .827, chi-square around 122.814, df = 2, p < .001.

*
 * Expected epsilon table:
 * Greenhouse-Geisser around .853
 * Huynh-Feldt around .855
 * Lower-bound .500.

*
 * Expected within-subjects effect:
 * F around 36.287.

*
 * In final reporting, write p < .001, not p = .000.

* -----
 * 7. Export SPSS output to PDF.
 * -----

```
OUTPUT EXPORT
  /CONTENTS EXPORT=VISIBLE LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
  /PDF DOCUMENTFILE='D:\low kda score priority basis posts\first post\Mauchly
Test of Sphericity\SPSS\Mauchlys-Test-of-Sphericity-SPSS-output-comma-fixed.pdf'.
f'.
```

Output Export

Export Summary

Viewer	Document2
Document File	D:\low kda score priority basis posts\first post\Mauchly Test of Sphericity\SPSS\Mauchlys-Test-of-Sphericity-SPSS-output-comma-fixed.pdf

* -----
 * 8. Save working SPSS file.
 * -----

```
SAVE OUTFILE='D:\low kda score priority basis posts\first post\Mauchly Test of
Sphericity\SPSS\Mauchlys-Test-of-Sphericity-SPSS-working-file-comma-fixed.sav
',
  /COMPRESSED.
```

EXECUTE.

```
* =====.  
* END OF COMMA CSV FIXED SPSS SYNTAX.  
* =====.
```