

Host

Notes

Output Created		23-JUN-2026 09:12:26
Comments		
Input	Data	D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOV AData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax	HOST COMMAND=['cmd /c if not exist "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output" mkdir "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output"'].	
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.14

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Input	Data	D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOV AData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax	HOST COMMAND=['cmd /c if not exist "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav" mkdir "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav"'].	
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.11

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Output Created		23-JUN-2026 09:12:27
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Input	Data	D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOV AData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax	<pre>HOST COMMAND=['cmd /c if not exist "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\spv " mkdir "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\spv "'].</pre>	
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.10

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Comments		
Input	Data	D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOVAData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=['cmd /c if not exist "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\pdf " mkdir "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\pdf "'].
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.11

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Output Created		23-JUN-2026 09:12:27
Comments		
Input	Data	D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOV AData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax	HOST COMMAND=['cmd /c if not exist "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\png" mkdir "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\png"'].	
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.11

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Comments		
Input	Data	D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOV AData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax	<pre>HOST COMMAND=['cmd /c if not exist "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\csv " mkdir "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\csv "'].</pre>	
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.09

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Output Created		23-JUN-2026 09:12:27
Comments		
Input	Data	D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOV AData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax	HOST COMMAND=['cmd /c if not exist "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\txt" mkdir "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\txt"...	
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.08

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Comments		
Input	Data	D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOV AData
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		HOST COMMAND=['cmd /c echo SPSS Repeated Measures ANOVA script started > "D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\SPSS_Output\txt\SPSS_SCRIPT_STARTER D.txt"'].
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.09

Dataset Name

Notes

Output Created		23-JUN-2026 09:12:28
Comments		
Input	Data	D:\DATA ANALYSIS\E ANOVA Family\Repeated Measures ANOVA\dataset.csv
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		DATASET NAME RepeatedMeasuresANOV AData WINDOW=FRONT.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

Warnings

The active dataset will replace the existing dataset named
RepeatedMeasuresANOVAData.

Repeated Measures ANOVA: G1, G2, and G3

File Information

Notes

Output Created		23-JUN-2026 09:12:28
Comments		
Input	Data	D:\DATA ANALYSIS\EANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOVAData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		DISPLAY DICTIONARY.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.01

Repeated Measures ANOVA: G1, G2, and G3

Variable Information

Variable	Position	Label	Measurement Level	Role	Column Width	Alignment
school	1	<none>	Nominal	Input	10	Left
sex	2	<none>	Nominal	Input	10	Left
age	3	<none>	Scale	Input	8	Right
address	4	<none>	Nominal	Input	10	Left
famsize	5	<none>	Nominal	Input	10	Left
Pstatus	6	<none>	Nominal	Input	10	Left
Medu	7	<none>	Nominal	Input	8	Right
Fedu	8	<none>	Nominal	Input	8	Right
Mjob	9	<none>	Nominal	Input	20	Left
Fjob	10	<none>	Nominal	Input	20	Left
reason	11	<none>	Nominal	Input	20	Left
guardian	12	<none>	Nominal	Input	20	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	10	Left
famsup	17	<none>	Nominal	Input	10	Left
paid	18	<none>	Nominal	Input	10	Left
activities	19	<none>	Nominal	Input	10	Left
nursery	20	<none>	Nominal	Input	10	Left
higher	21	<none>	Nominal	Input	10	Left
internet	22	<none>	Nominal	Input	10	Left
romantic	23	<none>	Nominal	Input	10	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

Repeated Measures ANOVA: G1, G2, and G3

Variable Information

Variable	Print Format	Write Format
school	A10	A10
sex	A10	A10
age	F8.2	F8.2
address	A10	A10
famsize	A10	A10
Pstatus	A10	A10
Medu	F8.2	F8.2
Fedu	F8.2	F8.2
Mjob	A20	A20
Fjob	A20	A20
reason	A20	A20
guardian	A20	A20
traveltime	F8.2	F8.2
studytime	F8.2	F8.2
failures	F8.2	F8.2
schoolsup	A10	A10
famsup	A10	A10
paid	A10	A10
activities	A10	A10
nursery	A10	A10
higher	A10	A10
internet	A10	A10
romantic	A10	A10
famrel	F8.2	F8.2
freetime	F8.2	F8.2
goout	F8.2	F8.2
Dalc	F8.2	F8.2
Walc	F8.2	F8.2
health	F8.2	F8.2
absences	F8.2	F8.2

Repeated Measures ANOVA: G1, G2, and G3

Variable Information

Variable	Position	Label	Measurement Level	Role	Column Width	Alignment
G1	31	First period grade	Nominal	Input	8	Right
G2	32	Second period grade	Nominal	Input	8	Right
G3	33	Final grade score	Nominal	Input	8	Right

Variable Information

Variable	Print Format	Write Format
G1	F8.2	F8.2
G2	F8.2	F8.2
G3	F8.2	F8.2

Variables in the working file

Descriptives

Repeated Measures ANOVA: G1, G2, and G3

Notes

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	Active Dataset	RepeatedMeasuresANOV AData
	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=G1 G2 G3 /STATISTICS=MEAN STDDEV MIN MAX.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
G1	649	.00	19.00	11.3991	2.74527
G2	649	.00	19.00	11.5701	2.91364
G3	649	.00	19.00	11.9060	3.23066
Valid N (listwise)	649				

Correlations

Repeated Measures ANOVA: G1, G2, and G3

Notes

Output Created		23-JUN-2026 09:12:29
Comments		
Input	Data	D:\DATA ANALYSIS\IE ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anova_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOV AData
	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	00:00:00.02
	Elapsed Time	00:00:00.04

Repeated Measures ANOVA: G1, G2, and G3

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).

General Linear Model

Notes

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Input	Data	D:\DATA ANALYSIS\IE ANOVA Family\Repeated Measures ANOVA\SPSS_Output\sav\repeated_measures_anov a_spss_ready_data.sav
	Active Dataset	RepeatedMeasuresANOV AData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
	Missing Value Handling	Definition of Missing
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Repeated Measures ANOVA: G1, G2, and G3

Notes

Syntax	GLM G1 G2 G3 /WSFACTOR=GradeTime 3 Polynomial /METHOD=SSTYPE(3) /PRINT=DESCRIPTIVE ETASQ PARAMETER /PLOT=PROFILE (GradeTime) /EMMEANS=TABLES (GradeTime) /CRITERIA=ALPHA(.05) /WSDESIGN=GradeTime.	
Resources	Processor Time	00:00:00.74
	Elapsed Time	00:00:00.59

Within-Subjects Factors

Measure: MEASURE_1

GradeTime	Dependent Variable
1	G1
2	G2
3	G3

Descriptive Statistics

	Mean	Std. Deviation	N
G1	11.3991	2.74527	649
G2	11.5701	2.91364	649
G3	11.9060	3.23066	649

Repeated Measures ANOVA: G1, G2, and G3

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: MEASURE_1

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: MEASURE_1

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

Repeated Measures ANOVA: G1, G2, and G3

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: MEASURE_1

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: MEASURE_1

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		

Repeated Measures ANOVA: G1, G2, and G3

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

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: MEASURE_1

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

Tests of Between-Subjects Effects

Measure: MEASURE_1

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			

Parameter Estimates

Dependent Variable	Parameter	B	Std. Error	t	Sig.	95% ... Lower Bound
G1	Intercept	11.399	.108	105.781	.000	11.187
G2	Intercept	11.570	.114	101.164	.000	11.346
G3	Intercept	11.906	.127	93.885	.000	11.657

Repeated Measures ANOVA: G1, G2, and G3

Parameter Estimates

Dependent Variable	Parameter	95% Confidence Interval		Partial Eta Squared
		Lower Bound	Upper Bound	
G1	Intercept	11.611		.945
G2	Intercept	11.795		.940
G3	Intercept	12.155		.932

Estimated Marginal Means

GradeTime

Measure: MEASURE_1

GradeTime	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	11.399	.108	11.187	11.611
2	11.570	.114	11.346	11.795
3	11.906	.127	11.657	12.155

Profile Plots

