```
174  0  OUTPUT ACTIVATE CorrelationforSurveyDataOutput.
174  0 M>  OUTPUT ACTIVATE CorrelationforSurveyDataOutput.
175  0  TITLE 'Correlation for Survey Data'.
175  0 M>  TITLE 'Correlation for Survey Data'.
```

```
 176  0
 176  0 M>
 177  0  GET DATA
 177  0 M>  GET DATA
 178  0   /TYPE=TXT /FILE='D:\DATA ANALYSIS\M Survey and Likert Scale Analysis
\Correlation for Survey Data\dataset.csv' /ENCODING='U
            TF8' /DELCASE=LINE /DELIMITERS=',' /QUALIFIER='"'
 178  0 M>   /TYPE=TXT /FILE='D:\DATA ANALYSIS\M Survey and Likert Scale Analy
sis\Correlation for Survey Data\dataset.csv' /ENCODING
              ='UTF8' /DELCASE=LINE /DELIMITERS=',' /QUALIFIER='"'
 179  0   /ARRANGEMENT=DELIMITED /FIRSTCASE=2
 179  0 M>   /ARRANGEMENT=DELIMITED /FIRSTCASE=2
 180  0   /VARIABLES=
 180  0 M>   /VARIABLES=
 181  0   school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8 Medu F8.0
 Fedu F8.0
 181  0 M>   school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8 Medu F
8.0 Fedu F8.0
 182  0   Mjob A16 Fjob A16 reason A16 guardian A16 traveltime F8.0 studytime
F8.0 failures F8.0
 182  0 M>   Mjob A16 Fjob A16 reason A16 guardian A16 traveltime F8.0 studyti
me F8.0 failures F8.0
 183  0   schoolsup A8 famsup A8 paid A8 activities A8 nursery A8 higher A8 in
ternet A8 romantic A8
 183  0 M>   schoolsup A8 famsup A8 paid A8 activities A8 nursery A8 higher A8
 internet A8 romantic A8
 184  0   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.
 184  0 M>   famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F
8.0 absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
 185  0  DATASET NAME CorrelationforSurveyDataData.
 185  0 M>  DATASET NAME CorrelationforSurveyDataData.
 186  0  COMPUTE subject_id=$CASENUM.
 186  0 M>  COMPUTE subject_id=$CASENUM.
 187  0  COMPUTE Dalc_R=6-Dalc.
 187  0 M>  COMPUTE Dalc_R=6-Dalc.
 188  0  COMPUTE Walc_R=6-Walc.
 188  0 M>  COMPUTE Walc_R=6-Walc.
```

```
 189  0  COMPUTE scale_score=MEAN.6(famrel,freetime,goout,Dalc_R,Walc_R,health
).
 189  0 M>  COMPUTE scale_score=MEAN.6(famrel,freetime,goout,Dalc_R,Walc_R,hea
lth).
 190  0  RECODE sex ('F'=1) ('M'=2) INTO sex_code.
 190  0 M>  RECODE sex ('F'=1) ('M'=2) INTO sex_code.
 191  0  RECODE school ('GP'=1) ('MS'=2) INTO school_code.
 191  0 M>  RECODE school ('GP'=1) ('MS'=2) INTO school_code.
 192  0  RECODE higher internet ('no'=0) ('yes'=1) INTO higher_code internet_c
ode.
 192  0 M>  RECODE higher internet ('no'=0) ('yes'=1) INTO higher_code interne
t_code.
 193  0  EXECUTE.
 193  0 M>  EXECUTE.
 194  0
 194  0 M>
 195  0  * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
 195  0 M>  * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
 196  0  TITLE 'Correlation for Survey Data'.
 196  0 M>  TITLE 'Correlation for Survey Data'.
```

```
 197  0  SUBTITLE 'Rank association between ordered study time and final grade
'.
 197  0 M>  SUBTITLE 'Rank association between ordered study time and final gr
ade'.
```

```
 198  0  NONPAR CORR /VARIABLES=studytime G3 /PRINT=SPEARMAN TWOTAIL NOSIG /MI
SSING=PAIRWISE.
 198  0 M>  NONPAR CORR /VARIABLES=studytime G3 /PRINT=SPEARMAN TWOTAIL NOSIG
/MISSING=PAIRWISE.
```

Nonparametric Correlations

Notes

Output Created		18-JUL-2026 13:20:44
Comments		
Input	Data	D:\DATA ANALYSIS\M Survey and Likert Scale Analysis\Correlation for Survey Data\dataset.csv
	Active Dataset	CorrelationforSurveyData 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		NONPAR CORR /VARIABLES=studytime G3 /PRINT=SPEARMAN TWOTAIL NOSIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.05
	Number of Cases Allowed	629145 cases[a]

a. Based on availability of workspace memory

```
[CorrelationforSurveyDataData]
```

Correlation for Survey Data
Rank association between ordered study time and final grade

Correlations

			studytime	G3
Spearman's rho	studytime	Correlation Coefficient	1.000	.275**
		Sig. (2-tailed)	.	.000
		N	649	649
	G3	Correlation Coefficient	.275**	1.000
		Sig. (2-tailed)	.000	.
		N	649	649

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

```
 199  0  NONPAR CORR /VARIABLES=studytime G3 /PRINT=KENDALL TWOTAIL NOSIG /MIS
SING=PAIRWISE.
 199  0 M>  NONPAR CORR /VARIABLES=studytime G3 /PRINT=KENDALL TWOTAIL NOSIG /
MISSING=PAIRWISE.
```

Nonparametric Correlations

Notes

Output Created		18-JUL-2026 13:20:44
Comments		
Input	Data	D:\DATA ANALYSIS\M Survey and Likert Scale Analysis\Correlation for Survey Data\dataset.csv
	Active Dataset	CorrelationforSurveyData 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.

Correlation for Survey Data
Rank association between ordered study time and final grade

Notes

Syntax		NONPAR CORR /VARIABLES=studytime G3 /PRINT=KENDALL TWOTAIL NOSIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.08
	Elapsed Time	00:00:00.06
	Number of Cases Allowed	629145 cases[a]

a. Based on availability of workspace memory

Correlations

			studytime	G3
Kendall's tau_b	studytime	Correlation Coefficient	1.000	.222**
		Sig. (2-tailed)	.	.000
		N	649	649
	G3	Correlation Coefficient	.222**	1.000
		Sig. (2-tailed)	.000	.
		N	649	649

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

```
 200  0  MEANS TABLES=G3 BY studytime /CELLS=COUNT MEAN MEDIAN STDDEV MIN MAX.
 200  0 M>  MEANS TABLES=G3 BY studytime /CELLS=COUNT MEAN MEDIAN STDDEV MIN M
AX.
```

Means

Correlation for Survey Data
Rank association between ordered study time and final grade

Notes

Output Created		18-JUL-2026 13:20:44
Comments		
Input	Data	D:\DATA ANALYSIS\M Survey and Likert Scale Analysis\Correlation for Survey Data\dataset.csv
	Active Dataset	CorrelationforSurveyData 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=G3 BY studytime /CELLS=COUNT MEAN MEDIAN STDDEV MIN MAX.
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.05

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
G3 * studytime	649	100.0%	0	0.0%	649	100.0%

Correlation for Survey Data
Rank association between ordered study time and final grade

Report

G3

studytime	N	Mean	Median	Std. Deviation	Minimum	Maximum
1	212	10.84	11.00	3.219	0	18
2	305	12.09	12.00	3.243	0	19
3	97	13.23	13.00	2.502	8	18
4	35	13.06	13.00	3.038	6	19
Total	649	11.91	12.00	3.231	0	19

```
 201  0  ECHO 'Spearman is primary because studytime is an ordered four-level
response'.
 201  0 M>  ECHO 'Spearman is primary because studytime is an ordered four-lev
el response'.
Spearman is primary because studytime is an ordered four-level response
 202  0  * END METHOD-SPECIFIC SPSS WORKFLOW.
 202  0 M>  * END METHOD-SPECIFIC SPSS WORKFLOW.
 203  0
 203  0 M>
 204  0  SAVE OUTFILE='D:\DATA ANALYSIS\M Survey and Likert Scale Analysis\Cor
relation for Survey Data\SPSS_Output\sav\correlation-f
           or-survey-data_spss_ready_data.sav' /COMPRESSED.
 204  0 M>  SAVE OUTFILE='D:\DATA ANALYSIS\M Survey and Likert Scale Analysis\
Correlation for Survey Data\SPSS_Output\sav\correlatio
              n-for-survey-data_spss_ready_data.sav' /COMPRESSED.
 205  0
 205  0 M>
 206  0  ECHO '============================================================
=========='.
 206  0 M>  ECHO '============================================================
============'.
==============================================================================
 207  0  ECHO 'CORRELATION FOR SURVEY DATA'.
 207  0 M>  ECHO 'CORRELATION FOR SURVEY DATA'.
CORRELATION FOR SURVEY DATA
 208  0  ECHO 'Method type: association_analysis'.
 208  0 M>  ECHO 'Method type: association_analysis'.
Method type: association_analysis
```

```
 209  0  ECHO 'Design: Rank-based association between ordered study-time respo
nses and final grade.'.
 209  0 M>  ECHO 'Design: Rank-based association between ordered study-time re
sponses and final grade.'.
Design: Rank-based association between ordered study-time responses and final
grade.
 210  0  ECHO 'Inference scope: H0 for the reported Spearman inference: the po
pulation rank correlation is zero.'.
 210  0 M>  ECHO 'Inference scope: H0 for the reported Spearman inference: the
 population rank correlation is zero.'.
Inference scope: H0 for the reported Spearman inference: the population rank c
orrelation is zero.
 211  0  ECHO 'Formula: rho_s=cor(rank(studytime),rank(G3)); tau_b adjusts con
cordant-discordant pairs for ties.'.
 211  0 M>  ECHO 'Formula: rho_s=cor(rank(studytime),rank(G3)); tau_b adjusts
concordant-discordant pairs for ties.'.
Formula: rho_s=cor(rank(studytime),rank(G3)); tau_b adjusts concordant-discord
ant pairs for ties.
 212  0  ECHO 'Variables: studytime, G3'.
 212  0 M>  ECHO 'Variables: studytime, G3'.
Variables: studytime, G3
 213  0  ECHO 'Rows analyzed: 649'.
 213  0 M>  ECHO 'Rows analyzed: 649'.
Rows analyzed: 649
 214  0  ECHO 'kendall_p_value = 2.514568793312303e-12'.
 214  0 M>  ECHO 'kendall_p_value = 2.514568793312303e-12'.
kendall_p_value = 2.514568793312303e-12
 215  0  ECHO 'kendall_tau_b = 0.22159616746694258'.
 215  0 M>  ECHO 'kendall_tau_b = 0.22159616746694258'.
kendall_tau_b = 0.22159616746694258
 216  0  ECHO 'n_pairs = 649'.
 216  0 M>  ECHO 'n_pairs = 649'.
n_pairs = 649
 217  0  ECHO 'spearman_p_value = 1.060624038270125e-12'.
 217  0 M>  ECHO 'spearman_p_value = 1.060624038270125e-12'.
spearman_p_value = 1.060624038270125e-12
 218  0  ECHO 'spearman_rho = 0.2747118483356099'.
 218  0 M>  ECHO 'spearman_rho = 0.2747118483356099'.
spearman_rho = 0.2747118483356099
```

```
 219  0  ECHO 'Cross-check status: pass'.
 219  0 M>  ECHO 'Cross-check status: pass'.
Cross-check status: pass
 220  0  ECHO '============================================================
=========='.
 220  0 M>  ECHO '============================================================
============'.
============================================================================
 221  0
 221  0 M>
 222  0  OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\M Survey and Likert Scale Analy
sis\Correlation for Survey Data\SPSS_Output\spv\correl
            ation-for-survey-data_spss_output.spv'.
 222  0 M>  OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\M Survey and Likert Scale An
alysis\Correlation for Survey Data\SPSS_Output\spv\cor
               relation-for-survey-data_spss_output.spv'.
 223  0  OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRI
NTSETTING
 223  0 M>  OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=
PRINTSETTING
```