

```
763 0 OUTPUT ACTIVATE ItemTotalCorrelationOutput.  
763 0 M> OUTPUT ACTIVATE ItemTotalCorrelationOutput.  
764 0 TITLE 'Item-Total Correlation'.  
764 0 M> TITLE 'Item-Total Correlation'.
```

Item-Total Correlation

```

765 0
765 0 M>
766 0 GET DATA
766 0 M> GET DATA
767 0 /TYPE=TXT
767 0 M> /TYPE=TXT
768 0 /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Item Total Correlation\dataset.csv'
768 0 M> /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Item Total Correlation\dataset.csv'
769 0 /ENCODING='UTF8'
769 0 M> /ENCODING='UTF8'
770 0 /DELCASE=LINE
770 0 M> /DELCASE=LINE
771 0 /DELIMITERS=', '
771 0 M> /DELIMITERS=', '
772 0 /QUALIFIER='"'
772 0 M> /QUALIFIER='"'
773 0 /ARRANGEMENT=DELIMITED
773 0 M> /ARRANGEMENT=DELIMITED
774 0 /FIRSTCASE=2
774 0 M> /FIRSTCASE=2
775 0 /VARIABLES=
775 0 M> /VARIABLES=
776 0 school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
776 0 M> school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
777 0 Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
777 0 M> Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
778 0 traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 famsup
A8
778 0 M> traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 famsup
up A8
779 0 paid A8 activities A8 nursery A8 higher A8 internet A8 romantic A
8
779 0 M> paid A8 activities A8 nursery A8 higher A8 internet A8 romanti
c A8
780 0 famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F
8.0

```

Item-Total Correlation

```

780  0 M>      famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F8.0
781  0      absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
781  0 M>      absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
782  0 DATASET NAME ItemTotalCorrelationData.
782  0 M> DATASET NAME ItemTotalCorrelationData.
783  0 EXECUTE.
783  0 M> EXECUTE.
784  0
784  0 M>
785  0 COMPUTE subject_id=$CASENUM.
785  0 M> COMPUTE subject_id=$CASENUM.
786  0 COMPUTE Dalc_R=6-Dalc.
786  0 M> COMPUTE Dalc_R=6-Dalc.
787  0 COMPUTE Walc_R=6-Walc.
787  0 M> COMPUTE Walc_R=6-Walc.
788  0 RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
788  0 M> RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
789  0      INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
789  0 M>      INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
790  0 RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
790  0 M> RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
791  0      INTO G1_cat3 G2_cat3 G3_cat3.
791  0 M>      INTO G1_cat3 G2_cat3 G3_cat3.
792  0 RECODE G1 G3 (LO THRU 8=1) (9 THRU 10=2) (11 THRU 12=3) (13 THRU 14=4) (15 THRU HI=5)
792  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)
793  0      INTO G1_cat5 G3_cat5.
793  0 M>      INTO G1_cat5 G3_cat5.
794  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).
794  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).

```

Item-Total Correlation

```
795 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).
795 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).
796 0 EXECUTE.
796 0 M> EXECUTE.
797 0
797 0 M>
798 0 * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
798 0 M> * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
799 0 TITLE 'Item Total Correlation'.
799 0 M> TITLE 'Item Total Correlation'.
```

Item Total Correlation

```
800 0 SUBTITLE 'Each transformed item remains inside the full composite total'.
```

```
800 0 M> SUBTITLE 'Each transformed item remains inside the full composite total'.
```

```
>Warning # 2004 on line 800. Command name: SUBTITLE
```

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

Item Total Correlation
Each transformed item remains inside the full composite tota

```

801  0  COMPUTE full_total=SUM(famrel,freetime,goout,Dalc_R,Walc_R,health).
801  0 M>  COMPUTE full_total=SUM(famrel,freetime,goout,Dalc_R,Walc_R,health)
.
802  0  CORRELATIONS /VARIABLES=full_total famrel freetime goout Dalc_R Walc_
R health /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
802  0 M>  CORRELATIONS /VARIABLES=full_total famrel freetime goout Dalc_R Wa
lc_R health /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.

```

Correlations

Notes

Output Created		16-JUL-2026 21:09:42
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Item Total Correlation\dataset.csv
	Active Dataset	ItemTotalCorrelationData
	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=full_total famrel freetime goout Dalc_R Walc_R health /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.05

[ItemTotalCorrelationData]

Item Total Correlation
Each transformed item remains inside the full composite tota

Correlations

		full_total	famrel	freetime	goout	Dalc_R	Walc_R
full_total	Pearson Correlation	1	.520**	.488**	.295**	.438**	.402**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	649	649	649	649	649	649
famrel	Pearson Correlation	.520**	1	.129**	.090*	.076	.094*
	Sig. (2-tailed)	.000		.001	.022	.054	.017
	N	649	649	649	649	649	649
freetime	Pearson Correlation	.488**	.129**	1	.346**	-.110**	-.120**
	Sig. (2-tailed)	.000	.001		.000	.005	.002
	N	649	649	649	649	649	649
goout	Pearson Correlation	.295**	.090*	.346**	1	-.245**	-.389**
	Sig. (2-tailed)	.000	.022	.000		.000	.000
	N	649	649	649	649	649	649
Dalc_R	Pearson Correlation	.438**	.076	-.110**	-.245**	1	.617**
	Sig. (2-tailed)	.000	.054	.005	.000		.000
	N	649	649	649	649	649	649
Walc_R	Pearson Correlation	.402**	.094*	-.120**	-.389**	.617**	1
	Sig. (2-tailed)	.000	.017	.002	.000	.000	
	N	649	649	649	649	649	649
health	Pearson Correlation	.478**	.110**	.085*	-.016	-.059	-.115**
	Sig. (2-tailed)	.000	.005	.031	.689	.133	.003
	N	649	649	649	649	649	649

Item Total Correlation
Each transformed item remains inside the full composite total

Correlations

		health
full_total	Pearson Correlation	.478**
	Sig. (2-tailed)	.000
	N	649
famrel	Pearson Correlation	.110**
	Sig. (2-tailed)	.005
	N	649
freetime	Pearson Correlation	.085*
	Sig. (2-tailed)	.031
	N	649
goout	Pearson Correlation	-.016
	Sig. (2-tailed)	.689
	N	649
Dalc_R	Pearson Correlation	-.059
	Sig. (2-tailed)	.133
	N	649
Walc_R	Pearson Correlation	-.115**
	Sig. (2-tailed)	.003
	N	649
health	Pearson Correlation	1
	Sig. (2-tailed)	
	N	649

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

* . Correlation is significant at the 0.05 level (2-tailed).

```

803  0  RELIABILITY /VARIABLES=famrel freetime goout Dalc_R Walc_R health /SCALE('Full total') ALL /MODEL=ALPHA /STATISTICS=DESCRIPTIVE SCALE CORR /SUMMARY=TOTAL.

803  0  M> RELIABILITY /VARIABLES=famrel freetime goout Dalc_R Walc_R health /SCALE('Full total') ALL /MODEL=ALPHA /STATISTICS=DESCRIPTIVE SCALE CORR /SUMMARY=TOTAL.

```

Reliability

Item Total Correlation
Each transformed item remains inside the full composite total

Notes

Output Created		16-JUL-2026 21:09:42
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Item Total Correlation\dataset.csv
	Active Dataset	ItemTotalCorrelationData
	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\Item Total Correlation\item_total_correlation_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.
Syntax		RELIABILITY /VARIABLES=famrel freetime goout Dalc_R Walc_R health /SCALE ('Full total') ALL /MODEL=ALPHA /STATISTICS=DESCRIPTIVE SCALE CORR /SUMMARY=TOTAL.
Resources	Processor Time	00:00:00.14
	Elapsed Time	00:00:00.10

Scale: Full total

Item Total Correlation
Each transformed item remains inside the full composite tota

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
.112	.169	6

Item Statistics

	Mean	Std. Deviation	N
famrel	3.9307	.95572	649
freetime	3.1803	1.05109	649
goout	3.1849	1.17577	649
Dalc_R	4.4977	.92483	649
Walc_R	3.7196	1.28438	649
health	3.5362	1.44626	649

Inter-Item Correlation Matrix

	famrel	freetime	goout	Dalc_R	Walc_R	health
famrel	1.000	.129	.090	.076	.094	.110
freetime	.129	1.000	.346	-.110	-.120	.085
goout	.090	.346	1.000	-.245	-.389	-.016
Dalc_R	.076	-.110	-.245	1.000	.617	-.059
Walc_R	.094	-.120	-.389	.617	1.000	-.115
health	.110	.085	-.016	-.059	-.115	1.000

Item Total Correlation
Each transformed item remains inside the full composite total

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
famrel	18.1186	6.778	.227	.053	-.056 ^a
freetime	18.8690	6.879	.151	.138	-.002 ^a
goout	18.8644	8.139	-.105	.258	.234
Dalc_R	17.5516	7.269	.139	.382	.022
Walc_R	18.3297	7.400	-.033	.456	.178
health	18.5131	6.806	-.010	.042	.165

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
22.0493	8.819	2.96960	6

```
804 0 DESCRIPTIVES VARIABLES=full_total famrel freetime goout Dalc_R Walc_R
health /STATISTICS=MEAN STDDEV MIN MAX.
804 0 M> DESCRIPTIVES VARIABLES=full_total famrel freetime goout Dalc_R Wal
c_R health /STATISTICS=MEAN STDDEV MIN MAX.
```

Descriptives

Item Total Correlation
Each transformed item remains inside the full composite tota

Notes

Output Created		16-JUL-2026 21:09:42
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Item Total Correlation\dataset.csv
	Active Dataset	ItemTotalCorrelationData
	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=full_total famrel freetime goout Dalc_R Walc_R health /STATISTICS=MEAN STDDEV MIN MAX.
Resources	Processor Time	00:00:00.17
	Elapsed Time	00:00:00.14

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
full_total	649	12.00	29.00	22.0493	2.96960
famrel	649	1	5	3.93	.956
freetime	649	1	5	3.18	1.051
goout	649	1	5	3.18	1.176
Dalc_R	649	1.00	5.00	4.4977	.92483
Walc_R	649	1.00	5.00	3.7196	1.28438
health	649	1	5	3.54	1.446
Valid N (listwise)	649				

Item Total Correlation
Each transformed item remains inside the full composite tota

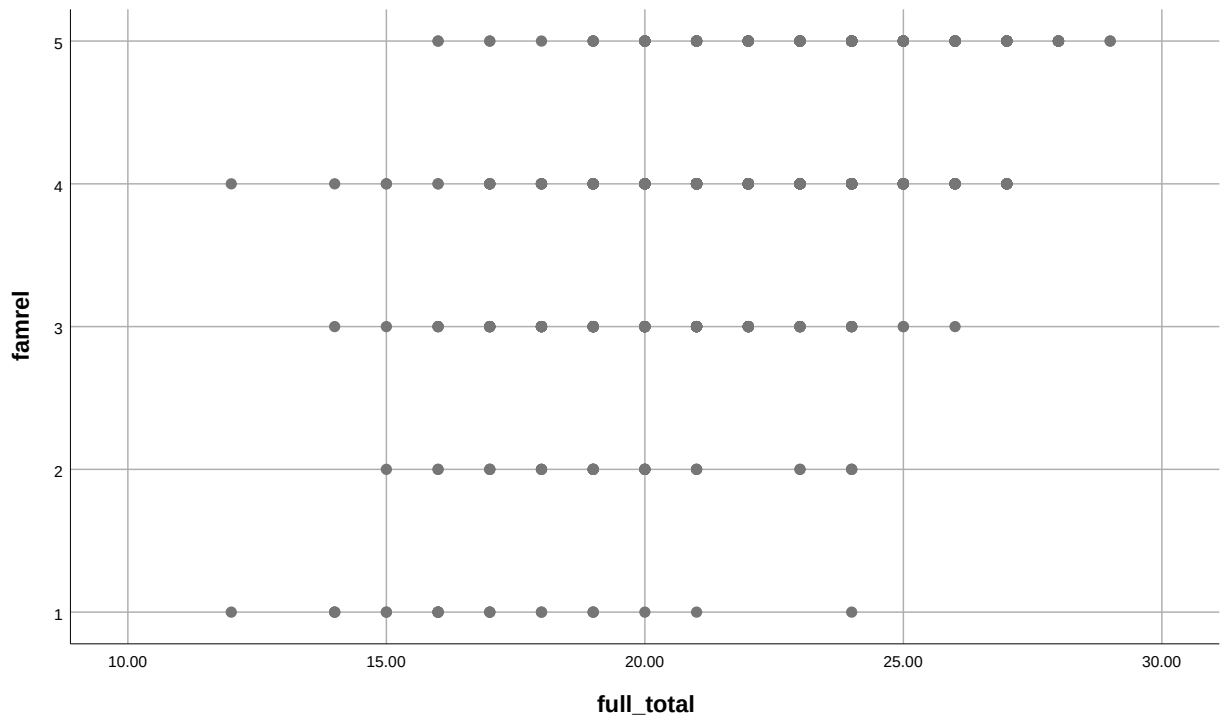
```
805  0  GRAPH /SCATTERPLOT(BIVAR)=full_total WITH famrel.
805  0 M> GRAPH /SCATTERPLOT(BIVAR)=full_total WITH famrel.
```

Graph

Notes

Output Created		16-JUL-2026 21:09:42
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Item Total Correlation\dataset.csv
	Active Dataset	ItemTotalCorrelationData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /SCATTERPLOT (BIVAR)=full_total WITH famrel.
Resources	Processor Time	00:00:00.75
	Elapsed Time	00:00:00.73

Item Total Correlation Each transformed item remains inside the full composite tota



```

806 0 * END METHOD-SPECIFIC SPSS WORKFLOW.
806 0 M> * END METHOD-SPECIFIC SPSS WORKFLOW.
807 0
807 0 M>
808 0 SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Item
Total Correlation\SPSS_Output\sav\item-total-correlat
ion_spss_ready_data.sav' /COMPRESSED.
808 0 M> SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\I
tem Total Correlation\SPSS_Output\sav\item-total-corre
lation_spss_ready_data.sav' /COMPRESSED.
809 0
809 0 M>
810 0 ECHO '=====
====='.
810 0 M> ECHO '=====
====='.
=====
811 0 ECHO 'ITEM-TOTAL CORRELATION'.
811 0 M> ECHO 'ITEM-TOTAL CORRELATION'.
ITEM-TOTAL CORRELATION

```

Item Total Correlation
Each transformed item remains inside the full composite total

```
812 0 ECHO 'Design: Each transformed item correlated with the full six-item
total that includes that item.'.
812 0 M> ECHO 'Design: Each transformed item correlated with the full six-i
tem total that includes that item.'.
Design: Each transformed item correlated with the full six-item total that inc
ludes that item.
813 0 ECHO 'Null hypothesis: An item has zero linear association with the f
ull composite score.'.
813 0 M> ECHO 'Null hypothesis: An item has zero linear association with th
e full composite score.'.
Null hypothesis: An item has zero linear association with the full composite s
core.
814 0 ECHO 'Formula: r_i,total=cor(X_i, sum_j X_j).'.
814 0 M> ECHO 'Formula: r_i,total=cor(X_i, sum_j X_j).'.
Formula: r_i,total=cor(X_i, sum_j X_j).
815 0 ECHO 'Variables: famrel, freetime, goout, Dalc_R, Walc_R, health'.
815 0 M> ECHO 'Variables: famrel, freetime, goout, Dalc_R, Walc_R, health'.
Variables: famrel, freetime, goout, Dalc_R, Walc_R, health
816 0 ECHO 'Rows analyzed: 649'.
816 0 M> ECHO 'Rows analyzed: 649'.
Rows analyzed: 649
817 0 ECHO 'items = 6'.
817 0 M> ECHO 'items = 6'.
items = 6
818 0 ECHO 'maximum_item_total_r = 0.5204850891945428'.
818 0 M> ECHO 'maximum_item_total_r = 0.5204850891945428'.
maximum_item_total_r = 0.5204850891945428
819 0 ECHO 'mean_item_total_r = 0.4368562244557915'.
819 0 M> ECHO 'mean_item_total_r = 0.4368562244557915'.
mean_item_total_r = 0.4368562244557915
820 0 ECHO 'minimum_item_total_r = 0.29528130393217883'.
820 0 M> ECHO 'minimum_item_total_r = 0.29528130393217883'.
minimum_item_total_r = 0.29528130393217883
821 0 ECHO 'items = 6'.
821 0 M> ECHO 'items = 6'.
items = 6
822 0 ECHO 'maximum_item_total_r = 0.5204850891945428'.
822 0 M> ECHO 'maximum_item_total_r = 0.5204850891945428'.
maximum_item_total_r = 0.5204850891945428
```

Item Total Correlation
Each transformed item remains inside the full composite total

```
823  0  ECHO 'mean_item_total_r = 0.4368562244557915'.
823  0 M> ECHO 'mean_item_total_r = 0.4368562244557915'.
mean_item_total_r = 0.4368562244557915
824  0  ECHO 'minimum_item_total_r = 0.29528130393217883'.
824  0 M> ECHO 'minimum_item_total_r = 0.29528130393217883'.
minimum_item_total_r = 0.29528130393217883
825  0  ECHO 'Cross-check status: pass'.
825  0 M> ECHO 'Cross-check status: pass'.
Cross-check status: pass
826  0  ECHO '=====
====='.
826  0 M> ECHO '=====
====='.
=====
827  0
827  0 M>
828  0  OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Item Total Correlation\SPSS_Output\spv\item-total-correlation_spss_output.spv'.
828  0 M> OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Item Total Correlation\SPSS_Output\spv\item-total-correlation_spss_output.spv'.
829  0  OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
829  0 M> OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
```