

```
277 0 OUTPUT ACTIVATE CronbachsAlphaOutput.  
277 0 M> OUTPUT ACTIVATE CronbachsAlphaOutput.  
278 0 TITLE 'Cronbach''s Raw Alpha'.  
278 0 M> TITLE 'Cronbach''s Raw Alpha'.
```

Cronbach's Raw Alpha

```

279 0
279 0 M>
280 0 GET DATA
280 0 M> GET DATA
281 0 /TYPE=TXT
281 0 M> /TYPE=TXT
282 0 /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Cronbachs
Alpha\dataset.csv'
282 0 M> /FILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Cronba
chs Alpha\dataset.csv'
283 0 /ENCODING='UTF8'
283 0 M> /ENCODING='UTF8'
284 0 /DELCASE=LINE
284 0 M> /DELCASE=LINE
285 0 /DELIMITERS=', '
285 0 M> /DELIMITERS=', '
286 0 /QUALIFIER='"'
286 0 M> /QUALIFIER='"'
287 0 /ARRANGEMENT=DELIMITED
287 0 M> /ARRANGEMENT=DELIMITED
288 0 /FIRSTCASE=2
288 0 M> /FIRSTCASE=2
289 0 /VARIABLES=
289 0 M> /VARIABLES=
290 0 school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
290 0 M> school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A8
291 0 Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
291 0 M> Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 guardian A16
292 0 traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 famsup
A8
292 0 M> traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A8 fams
up A8
293 0 paid A8 activities A8 nursery A8 higher A8 internet A8 romantic A
8
293 0 M> paid A8 activities A8 nursery A8 higher A8 internet A8 romanti
c A8
294 0 famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F
8.0

```

Cronbach's Raw Alpha

```

294 0 M>      famrel F8.0 freetime F8.0 goout F8.0 Dalc F8.0 Walc F8.0 health F8.0
295 0      absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
295 0 M>      absences F8.0 G1 F8.0 G2 F8.0 G3 F8.0.
296 0 DATASET NAME CronbachsAlphaData.
296 0 M> DATASET NAME CronbachsAlphaData.
297 0 EXECUTE.
297 0 M> EXECUTE.
298 0
298 0 M>
299 0 COMPUTE subject_id=$CASENUM.
299 0 M> COMPUTE subject_id=$CASENUM.
300 0 COMPUTE Dalc_R=6-Dalc.
300 0 M> COMPUTE Dalc_R=6-Dalc.
301 0 COMPUTE Walc_R=6-Walc.
301 0 M> COMPUTE Walc_R=6-Walc.
302 0 RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
302 0 M> RECODE schoolsup famsup paid activities higher internet ('no'=0) ('yes'=1)
303 0 INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
303 0 M> INTO schoolsup_b famsup_b paid_b activities_b higher_b internet_b.
304 0 RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
304 0 M> RECODE G1 G2 G3 (LO THRU 9=1) (10 THRU 13=2) (14 THRU HI=3)
305 0 INTO G1_cat3 G2_cat3 G3_cat3.
305 0 M> INTO G1_cat3 G2_cat3 G3_cat3.
306 0 RECODE G1 G3 (LO THRU 8=1) (9 THRU 10=2) (11 THRU 12=3) (13 THRU 14=4) (15 THRU HI=5)
306 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)
307 0 INTO G1_cat5 G3_cat5.
307 0 M> INTO G1_cat5 G3_cat5.
308 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).
308 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).

```

Cronbach's Raw Alpha

```
309 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).
309 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).
310 0 EXECUTE.
310 0 M> EXECUTE.
311 0
311 0 M>
312 0 * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
312 0 M> * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
313 0 TITLE 'Cronbachs Raw Alpha'.
313 0 M> TITLE 'Cronbachs Raw Alpha'.
```

Cronbachs Raw Alpha

314 0 SUBTITLE 'Six transformed self-regulation and wellbeing items'.

314 0 M> SUBTITLE 'Six transformed self-regulation and wellbeing items'.

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

```

315  0  RELIABILITY /VARIABLES=famrel freetime goout Dalc_R Walc_R health
315  0 M> RELIABILITY /VARIABLES=famrel freetime goout Dalc_R Walc_R health
316  0  /SCALE('Raw score composite') ALL /MODEL=ALPHA
316  0 M> /SCALE('Raw score composite') ALL /MODEL=ALPHA
317  0  /STATISTICS=DESCRIPTIVE SCALE CORR COV /SUMMARY=TOTAL MEANS VARIANCE
COV CORR.
317  0 M> /STATISTICS=DESCRIPTIVE SCALE CORR COV /SUMMARY=TOTAL MEANS VARIA
NCE COV CORR.

```

Reliability

Notes

Output Created		16-JUL-2026 21:08:51
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Cronbachs Alpha\dataset.csv
	Active Dataset	CronbachsAlphaData
	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\Cronbachs Alpha\cronbachs_alpha_s pss_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.

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

Notes

Syntax		RELIABILITY /VARIABLES=famrel freetime goout Dalc_R Walc_R health /SCALE('Raw score composite') ALL /MODEL=ALPHA /STATISTICS=DESCRIPT IVE SCALE CORR COV /SUMMARY=TOTAL MEANS VARIANCE COV CORR.
Resources	Processor Time	00:00:00.08
	Elapsed Time	00:00:00.35

[CronbachsAlphaData]

Scale: Raw score composite

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

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

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

Inter-Item Covariance Matrix

	famrel	freetime	goout	Dalc_R	Walc_R	health
famrel	.913	.130	.101	.067	.115	.151
freetime	.130	1.105	.428	-.107	-.162	.128
goout	.101	.428	1.382	-.267	-.587	-.027
Dalc_R	.067	-.107	-.267	.855	.732	-.079
Walc_R	.115	-.162	-.587	.732	1.650	-.214
health	.151	.128	-.027	-.079	-.214	2.092

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance
Item Means	3.675	3.180	4.498	1.317	1.414	.250
Item Variances	1.333	.855	2.092	1.236	2.445	.227
Inter-Item Covariances	.027	-.587	.732	1.319	-1.248	.090
Inter-Item Correlations	.033	-.389	.617	1.005	-1.586	.055

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

Summary Item Statistics

	N of Items
Item Means	6
Item Variances	6
Inter-Item Covariances	6
Inter-Item Correlations	6

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

```

318  0  COMPUTE alpha_total=SUM(famrel,freetime,goout,Dalc_R,Walc_R,health).
318  0  M>  COMPUTE alpha_total=SUM(famrel,freetime,goout,Dalc_R,Walc_R,health
).
319  0  FREQUENCIES VARIABLES=alpha_total /STATISTICS=MEAN MEDIAN STDDEV VARI
ANCE MINIMUM MAXIMUM /HISTOGRAM.
319  0  M>  FREQUENCIES VARIABLES=alpha_total /STATISTICS=MEAN MEDIAN STDDEV V
ARIANCE MINIMUM MAXIMUM /HISTOGRAM.

```

Frequencies

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

Notes

Output Created		16-JUL-2026 21:08:52
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Cronbachs Alpha\dataset.csv
	Active Dataset	CronbachsAlphaData
	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 are based on all cases with valid data.
Syntax		FREQUENCIES VARIABLES=alpha_total /STATISTICS=MEAN MEDIAN STDDEV VARIANCE MINIMUM MAXIMUM /HISTOGRAM.
Resources	Processor Time	00:00:00.97
	Elapsed Time	00:00:01.28

Statistics

alpha_total

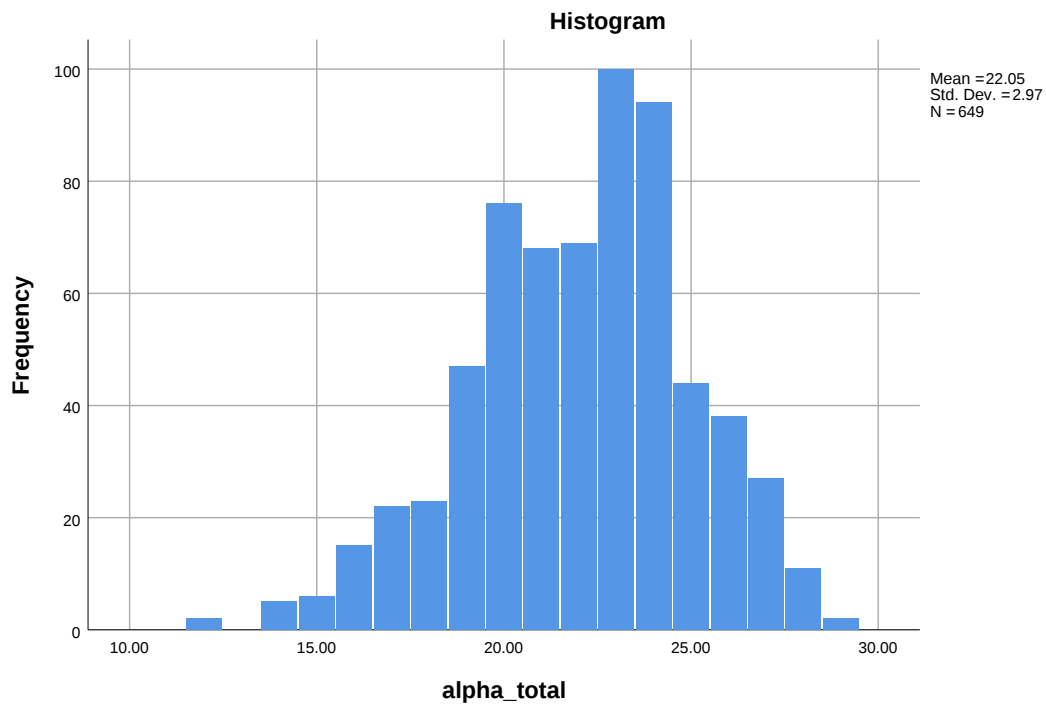
N	Valid	649
	Missing	0
Mean		22.0493
Median		22.0000
Std. Deviation		2.96960
Variance		8.819
Minimum		12.00
Maximum		29.00

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

alpha_total

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12.00	2	.3	.3	.3
	14.00	5	.8	.8	1.1
	15.00	6	.9	.9	2.0
	16.00	15	2.3	2.3	4.3
	17.00	22	3.4	3.4	7.7
	18.00	23	3.5	3.5	11.2
	19.00	47	7.2	7.2	18.5
	20.00	76	11.7	11.7	30.2
	21.00	68	10.5	10.5	40.7
	22.00	69	10.6	10.6	51.3
	23.00	100	15.4	15.4	66.7
	24.00	94	14.5	14.5	81.2
	25.00	44	6.8	6.8	88.0
	26.00	38	5.9	5.9	93.8
	27.00	27	4.2	4.2	98.0
	28.00	11	1.7	1.7	99.7
	29.00	2	.3	.3	100.0
	Total	649	100.0	100.0	

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items



```
320 0 CORRELATIONS /VARIABLES=famrel freetime goout Dalc_R Walc_R health /P
RINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
320 0 M> CORRELATIONS /VARIABLES=famrel freetime goout Dalc_R Walc_R health
/PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
```

Correlations

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

Notes

Output Created		16-JUL-2026 21:08:53
Comments		
Input	Data	D:\DATA ANALYSIS\K Reliability and Agreement Tests\Cronbachs Alpha\dataset.csv
	Active Dataset	CronbachsAlphaData
	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=famrel freetime goout Dalc_R Walc_R health /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.11
	Elapsed Time	00:00:00.86

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

Correlations

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

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

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

```

321 0 * END METHOD-SPECIFIC SPSS WORKFLOW.
321 0 M> * END METHOD-SPECIFIC SPSS WORKFLOW.
322 0
322 0 M>
323 0 SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Cron
bachs Alpha\SPSS_Output\sav\cronbachs-alpha_spss_ready
_data.sav' /COMPRESSED.
323 0 M> SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\C
ronbachs Alpha\SPSS_Output\sav\cronbachs-alpha_spss_re
ady_data.sav' /COMPRESSED.
324 0
324 0 M>

```

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

```

325 0 ECHO '=====
====='.
325 0 M> ECHO '=====
====='.
=====
326 0 ECHO 'CRONBACH'S RAW ALPHA'.
326 0 M> ECHO 'CRONBACH'S RAW ALPHA'.
CRONBACH'S RAW ALPHA
327 0 ECHO 'Design: Raw-score internal consistency of six transformed self-
regulation and wellbeing items.'.
327 0 M> ECHO 'Design: Raw-score internal consistency of six transformed se
lf-regulation and wellbeing items.'.
Design: Raw-score internal consistency of six transformed self-regulation and
wellbeing items.
328 0 ECHO 'Null hypothesis: The six-item composite has no common-score rel
iability beyond item-specific variance.'.
328 0 M> ECHO 'Null hypothesis: The six-item composite has no common-score
reliability beyond item-specific variance.'.
Null hypothesis: The six-item composite has no common-score reliability beyond
item-specific variance.
329 0 ECHO 'Formula:  $\alpha = k/(k-1)[1 - \sum s_i^2/s_{total}^2]$ '.
329 0 M> ECHO 'Formula:  $\alpha = k/(k-1)[1 - \sum s_i^2/s_{total}^2]$ '.
Formula:  $\alpha = k/(k-1)[1 - \sum s_i^2/s_{total}^2]$ .
330 0 ECHO 'Variables: famrel, freetime, goout, Dalc_R, Walc_R, health'.
330 0 M> ECHO 'Variables: famrel, freetime, goout, Dalc_R, Walc_R, health'.
Variables: famrel, freetime, goout, Dalc_R, Walc_R, health
331 0 ECHO 'Rows analyzed: 649'.
331 0 M> ECHO 'Rows analyzed: 649'.
Rows analyzed: 649
332 0 ECHO 'cronbach_alpha = 0.1117626312468654'.
332 0 M> ECHO 'cronbach_alpha = 0.1117626312468654'.
cronbach_alpha = 0.1117626312468654
333 0 ECHO 'items = 6'.
333 0 M> ECHO 'items = 6'.
items = 6
334 0 ECHO 'n_cases = 649'.
334 0 M> ECHO 'n_cases = 649'.
n_cases = 649
335 0 ECHO 'total_score_variance = 8.818552759230725'.
```

Cronbachs Raw Alpha
Six transformed self-regulation and wellbeing items

```
335  0 M> ECHO 'total_score_variance = 8.818552759230725'.
total_score_variance = 8.818552759230725
336  0 ECHO 'cronbach_alpha = 0.1117626312468654'.
336  0 M> ECHO 'cronbach_alpha = 0.1117626312468654'.
cronbach_alpha = 0.1117626312468654
337  0 ECHO 'items = 6'.
337  0 M> ECHO 'items = 6'.
items = 6
338  0 ECHO 'n_cases = 649'.
338  0 M> ECHO 'n_cases = 649'.
n_cases = 649
339  0 ECHO 'total_score_variance = 8.818552759230725'.
339  0 M> ECHO 'total_score_variance = 8.818552759230725'.
total_score_variance = 8.818552759230725
340  0 ECHO 'Cross-check status: pass'.
340  0 M> ECHO 'Cross-check status: pass'.
Cross-check status: pass
341  0 ECHO '=====
====='.
341  0 M> ECHO '=====
====='.
=====
342  0
342  0 M>
343  0 OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Cronbachs Alpha\SPSS_Output\spv\cronbachs-alpha_sps
      s_output.spv'.
343  0 M> OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\K Reliability and Agreement Tests\Cronbachs Alpha\SPSS_Output\spv\cronbachs-alpha_
      spss_output.spv'.
344  0 OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
344  0 M> OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
```