Psi Beta National Research Study

Analyze your data file!

March 4th 2022

PSI BETA

COMMUNITY COLLEGE NATIONAL HONOR SOCIETY IN PSYCHOLOGY

ACKNOWLEDGEMENTS

Psi Beta's National Research Committee

- **Heather Schoenherr** (Committee chair & Rocky Mt. Vice President)
- **Liza Veliz** (Southwest Vice President & National President-Elect)
- **Elizabeth Arnot-Hill** (Midwest Vice President)
- **Jerry Rudmann** (Psi Beta's Executive Director)

Access To and Use of Psi Beta's National Research Study Data Files

The files presented or mentioned in this presentation can be downloaded from the Psi Beta website. Psi Beta's URL is www.psibeta.org

The on the Psi Beta homepage menu,

- Click on "Research" – top right of page
- From the dropdown menu, click on "Help Guide to Preparing Data...."

Help Guide to Preparing & Using the NRP Data

I. Tips for preparing your data file – covered in the February 25th webinar

Key files you'll want to download

Please CLICK HERE to download the raw data file (2.16.2022 raw data download)
Please CLICK HERE to download the codebook
Please CLICK HERE to download a PDF copy of the research questionnaire that participants responded to
Please CLICK HERE to download a PDF copy of former Psi Beta National Study information on Campus Connectedness and Shyness
Please CLICK HERE to download a copy of the PowerPoint used to present the webinar on data preparation and analysis
Please CLICK HERE to access a video replay of the February 25th webinar on preparing the national research study data file

Steps to prepare the raw data file before you can analyze it

1- Identify and remove cases with missing data.
2- Remove cases that do not connect the participant to a Psi Beta college (e.g. "Test" and "Attend another college").
3- Use the codebook to rename the variables on the spreadsheet.
4- Recode any variables having words instead of numbers.
5- Reverse code variables that need to be reverse coded.
6- Save the file as a CSV file.
7- Import the CSV file into JASP.

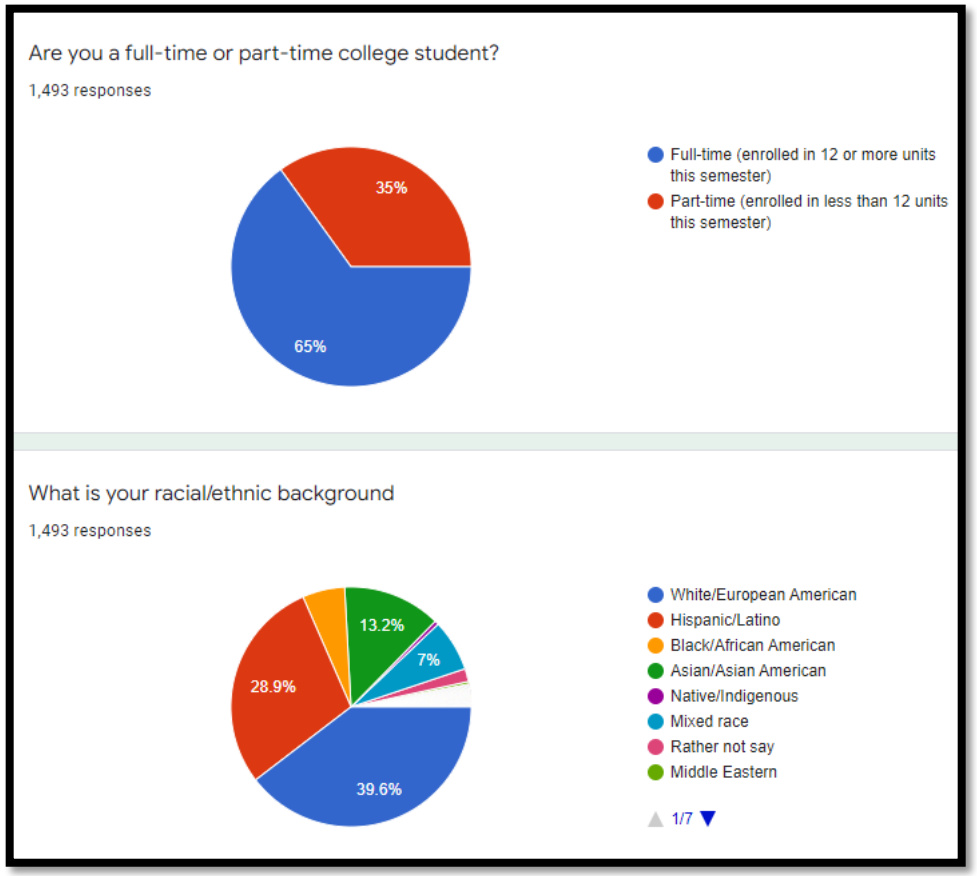
Brief step-by-step videos to help you prepare the raw data for analysis – each title below is a hot link

- Renaming variables – video clip

The Scales and Demographics

Scales	*Demographic Variables*
1. Self-efficacy for initiating conversations 2. Interest in learning interpersonal communication skills 3. Efficacy for facilitating balanced two-way conversations 4. Interpersonal competence during COVID-19 5. College connectedness 6. Ten-item Big 5 Inventory 7. Shyness 8. Social media usage aims 9. Social media use questionnaire 10. Most preferred social media platform (a single item, not a scale) 11. Estimated time spent on favorite social media platform per day (a single item, not a scale)	• Sex • Age • # semesters in college • FT / PT student • Racial/ethnic background • Mother attend college • Father attend college • Any sibling attend college • Intended academic major • Honor society member

Simple way to get most demographic information



Some demographics from the Google Form response view –

- Ethnicity
  - White/European American (39.6%)
  - Hispanic/Latino (28.9%)
  - Asian/Asian American (13.2%)
  - Black/African American (5.7%)
  - Other / rather not say (12.6%)
- # different colleges (students from 15 different campuses participated)
- Fulltime / parttime (65% are fulltime – 12 or more units)
- Sex
  - Female (74%)
  - Male (24%)
  - Other (2%)

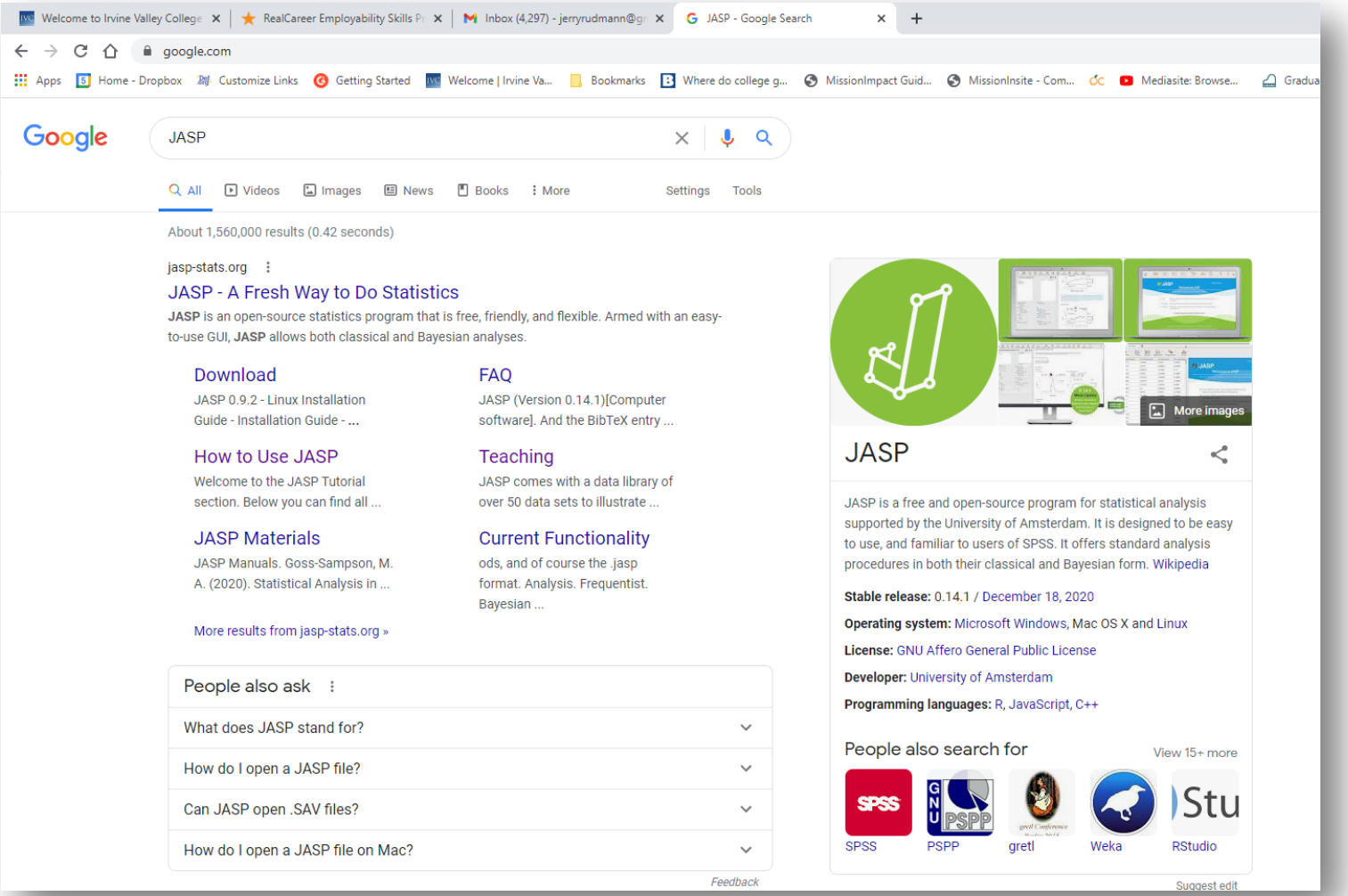
Steps for Analyzing the National Research Study Datafile

1. Open JASP
2. Open the CSV-formatted data file
3. Set each numerical item to “scale” instead of “nominal”
4. Use JASP to compute new variables (e.g., Connectedness total score, Shyness total score, etc.)

   Be sure to include recoded items (not the original items that you had to recode) when you compute Shyness and the Big-Five scales
5. Use JASP to compute reliability coefficients (Cronbach) for your scales
7. Finally, use JASP to test your research hypotheses

Using JASP

- Download JASP at jasp-stats.org
- Save your cleaned up Excel file as a CSV file
- Start JASP and open the CSV file
- In JASP
  - Convert all variables to “scale”
  - Use JASP to compute all new variables (e.g., scale scores for Shyness, Connectedness, Extraversion, etc.)
  - Use JASP for analyzing your datafile



JASP's Opening Screen

Moving Around JASP's Screens

NRP_JASP_All_Items_set to Scale_2.27.2022 (C:\Users\17143\Desktop\NRS_FILEs)

Descriptives | T-Tests | ANOVA | Mixed Models | Regression | Frequencies | Factor | Reliability

	College	E1	E2	E3	E4	E5	E6	E7	E8	E9	I1	I2	I3	I4	I5	C1	
1	Motlow State Community College - Fayetteville Campus	3	3	3	3	4	3	3	3	3	3	3	3	3	3	4	4
2	Golden West College	2	1	1	1	3	1	5	1	1	5	5	5	5	5	5	5
3	San Diego Mesa College	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
4	Golden West College	2	2	2	3	3	3	4	4	4	3	4	4	4	4	3	2
5	San Diego Mesa College	5	4	3	3	4	4	4	4	4	5	5	5	5	5	5	5
6	San Diego Mesa College	4	3	3	4	4	4	4	4	4	3	4	3	3	3	5	5
7	Eckerd College	5	5	5	5	5	4	5	5	5	1	1	1	1	2	5	4
8	Motlow State Community College - Smyrna Campus	5	5	5	5	5	5	5	5	5	1	1	1	1	1	5	5
9	Quinsigamond Community College	4	4	3	3	3	5	4	4	4	4	4	4	4	4	4	4
10	San Diego Mesa College	5	5	3	4	5	3	4	4	4	4	4	4	4	4	3	3
11	Quinsigamond Community College	3	3	2	2	3	2	3	3	3	4	3	3	3	3	3	4
12	Saddleback College	4	3	4	4	5	4	4	4	3	5	5	4	4	5	4	5
13	South Texas College	3	3	3	3	4	2	1	2	3	4	5	5	4	5	3	4
14	San Diego Mesa College	1	1	1	1	1	3	1	1	1	3	3	3	3	3	5	5
15	St. Petersburg College - Seminole Campus	4	4	3	3	3	3	3	3	4	3	3	2	2	2	4	3
16	Motlow State Community College - McMinnville Campus	5	5	5	5	5	5	5	5	5	2	2	2	2	2	5	5
17	Quinsigamond Community College	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
18	Motlow State Community College - McMinnville Campus	5	5	5	5	5	5	5	5	5	1	1	1	1	1	5	5
19	Golden West College	4	5	3	4	5	5	1	3	1	5	5	5	5	5	5	5
20	Orange Coast College	4	4	3	3	2	3	3	4	4	5	5	5	5	5	4	5
21	Paradise Valley Community College	5	5	4	4	5	5	5	5	5	3	2	2	2	5	5	5
22	Quinsigamond Community College	4	3	3	3	3	2	3	4	5	5	5	5	5	5	5	5
23	Government high school Diedo Douala	5	5	5	5	5	4	4	5	5	4	4	3	4	4	5	3
24	St. Petersburg College - Seminole Campus	5	5	4	4	4	4	5	5	5	2	2	2	2	2	3	4
25	San Diego Mesa College	5	5	4	5	4	4	5	5	4	4	4	4	5	5	4	5
26	Golden West College	3	1	1	1	3	2	2	4	3	4	4	4	4	4	4	5
27	Pa[illegible] Valley Community College	4	3	2	3	2	4	3	2	3	4	4	4	4	4	3	4
28	S[illegible] Mesa College	2	5	2	2	3	2	1	2	2	4	5	4	4	4	2	5
29	Quinsigamond Community College	3	3	1	1	4	3	1	1	2	5	5	4	4	4	4	4

NRP_JASP_All_Items_set to Scale_2.27.2022* (C:\Users\17143\Desktop\NRS_FILEs)

Descriptives | T-Tests | ANOVA | Mixed Models | Regression | Frequencies | Factor | Reliability

Descriptive Statistics

College
E1
E2
E3
E4
E5
E6
E7
E8
E9
I1
I2
I3
I4
I5
C1
C2

Variables

Split

Transp... criptives table

Frequency tables

...mum distinct values 10

Show data

Stem and leaf tables

scale 1

Plots

Statistics

Results

Descriptive Statistics

Descriptive Statistics

Valid	.
Missing	.
Mean	.
Std. Deviation	.
Minimum	.
Maximum	.

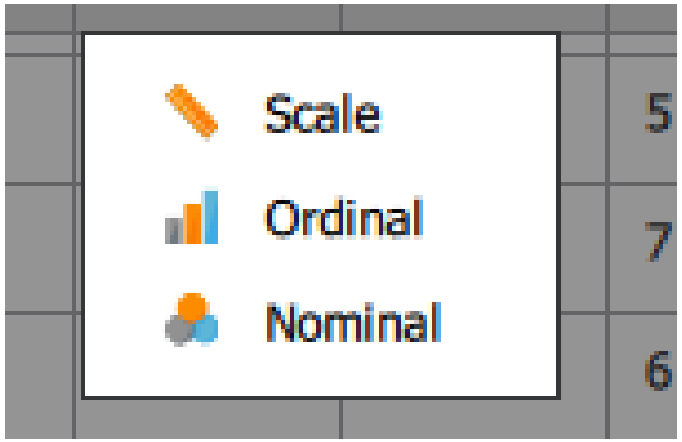
Hide Data

E7	E8	E9	I1	I2	I3	I4	I5	C1	
	4	5	4	4	4	5	5	5	3
	3	3	5	5	5	5	5	5	5
	3	3	1	1	1	1	1	4	2
	3	3	3	4	3	3	4	3	3
	3	3	4	4	4	4	4	3	4
	2	2	3	3	2	2	2	4	3
	5	5	5	5	5	5	5	5	5
	2	1	3	4	4	4	4	5	5
	3	5	4	4	4	4	4	5	5
	4	3	5	4	4	4	5	5	4
	5	5	5	5	5	5	5	5	5
	3	2	3	2	2	2	4	4	4
	5	5	5	5	5	5	5	5	5
	4	4	4	4	5	5	5	5	4
	3	1	5	2	2	5	5		
	2	2	5	5	5	5	5	4	4
	1	1	5	5	5	5	5	3	4
	5	5	5	5	5	2	5	5	5
	3	3	4	4	1	1	4	4	4
	2	2	5	5	4	3	4	4	5
	3	4	5	5	5	5	5	4	5
	2	3	5	5	5	5	5	5	5
	1	1	4	4	4	4	4	3	3
	3	1	2	2	2	2	2	3	5
	1	2	4	3	4	4	4	3	3
	4	4	3	3	3	3	3	4	4
	5	5	5	5	5	5	5	5	5
	4	5	4	4	4	4	5	5	5
	2	2	4	4	4	4	4	4	4

Change all numerical variables to “Scale”

Compute column

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
4	6	5	5	5	5	4	3
5	6	7	7	6	5	4	5
4	5	6	5	4	3	2	3
5	4	6	6	4	6	3	5
3	3	4	4	4	2	5	5
5	7	6	6	4	5	6	5
2	4	6	5	4	5	2	4
6	6	7	6	3	5	7	7
4	7	7	7	1	4	6	3



Compute column

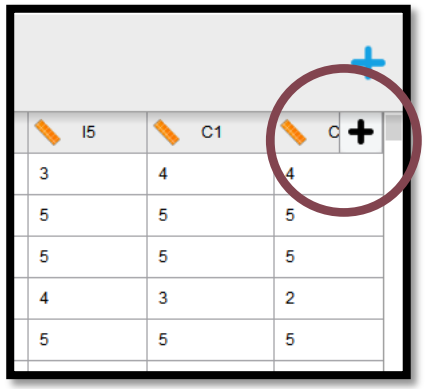
Q1	Q2	Q3	Q4
4	6	5	5
5	6	7	7
4	5	6	5
5	4	6	6
3	3	4	4

To Create New Variables in JASP, follow this guide

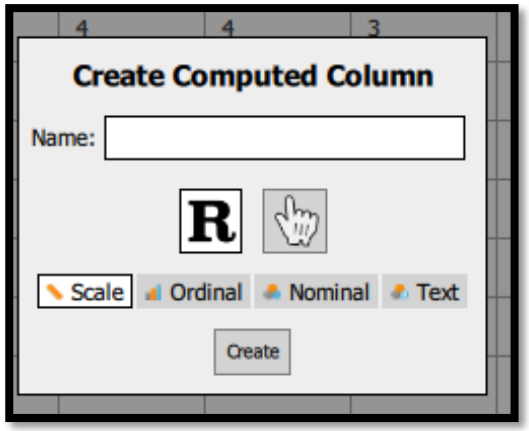
COMPUTED VARIABLES

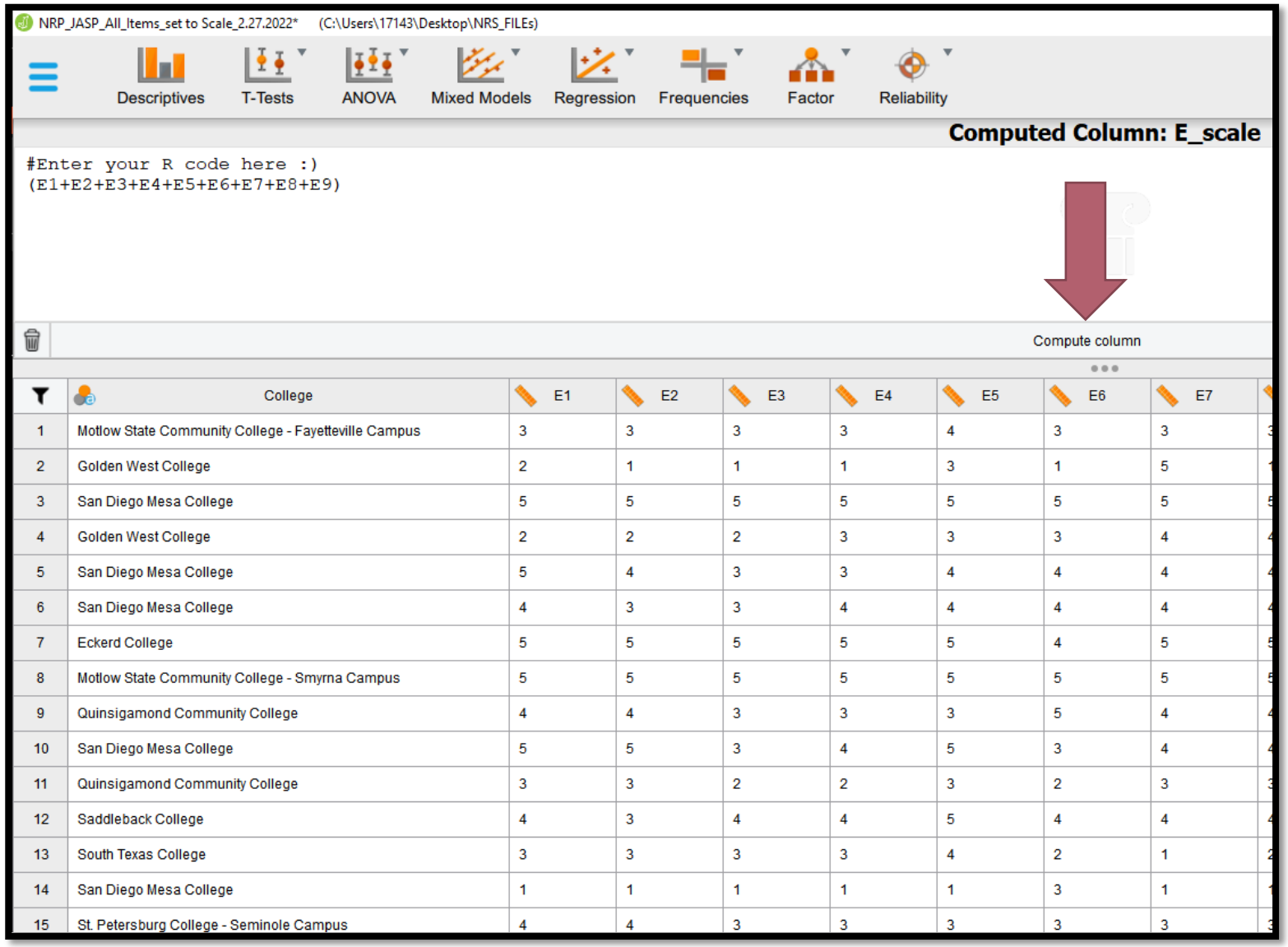
Computed Variable	Items in that scale	What it measures
E_SCALE	(E1+E2+E3+E4+E5+E6+E7+E8+E9)	Confidence for initiating conversations.
I_Scale	(I1+I2+I3+I4+I5)	Interest in learning effective interpersonal communication skills.
C_Scale	(C1+C2+C3+C4+C5+C6)	Confidence for having a balanced (two-way) conversation.
CC_Scale*	(CC1……CC14)*(7/5)	College connectedness.
EXTRAVERSION	(T1+T6R)	Extraversion
AGREEABLENESS	(T2R+T7)	Agreeableness
CONSCIENTIOUSNESS	(T3+T8R)	Conscientiousness
EMOTIONAL_STABILITY	(T4R+T9)	Emotional Stability
OPENNESS	(T5+T10R)	Openness to Experiences
Shyness	(S1 through S19) NOTE: Be sure to use reverse coded items in place of S4, S7, S10, S13, S16, & S18	Overall Shyness
SM_Scale	(SM1 through SM31)	Social media usage aims
SMU_Scale	(SMU1 through SMU9)	Social media use
SMC_Scale	(SMC1+SMC2+SMC3)	Social media changes during the pandemic

*Note that the CC scale computation includes a correction factor (7/5) in order to make the scale's values comparable to the 2010-11 study. The earlier study used a 7 point Likert scale. This year's study used a 5 point Likert scale.

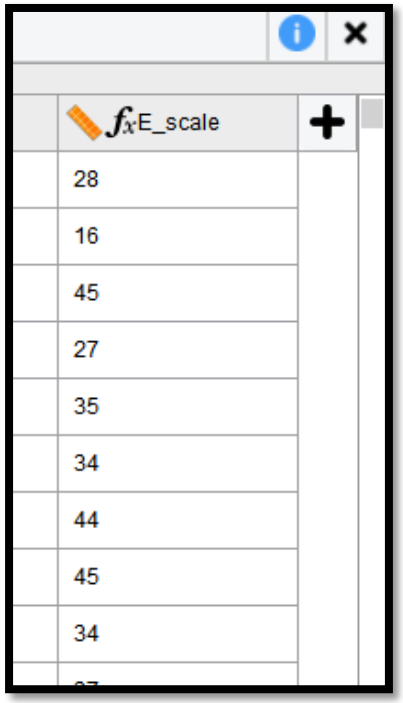


I5	C1	C
3	4	4
5	5	5
5	5	5
4	3	2
5	5	5





	College	E1	E2	E3	E4	E5	E6	E7
1	Motlow State Community College - Fayetteville Campus	3	3	3	3	4	3	3
2	Golden West College	2	1	1	1	3	1	5
3	San Diego Mesa College	5	5	5	5	5	5	5
4	Golden West College	2	2	2	3	3	3	4
5	San Diego Mesa College	5	4	3	3	4	4	4
6	San Diego Mesa College	4	3	3	4	4	4	4
7	Eckerd College	5	5	5	5	5	4	5
8	Motlow State Community College - Smyrna Campus	5	5	5	5	5	5	5
9	Quinsigamond Community College	4	4	3	3	3	5	4
10	San Diego Mesa College	5	5	3	4	5	3	4
11	Quinsigamond Community College	3	3	2	2	3	2	3
12	Saddleback College	4	3	4	4	5	4	4
13	South Texas College	3	3	3	3	4	2	1
14	San Diego Mesa College	1	1	1	1	1	3	1
15	St. Petersburg College - Seminole Campus	4	4	3	3	3	3	3



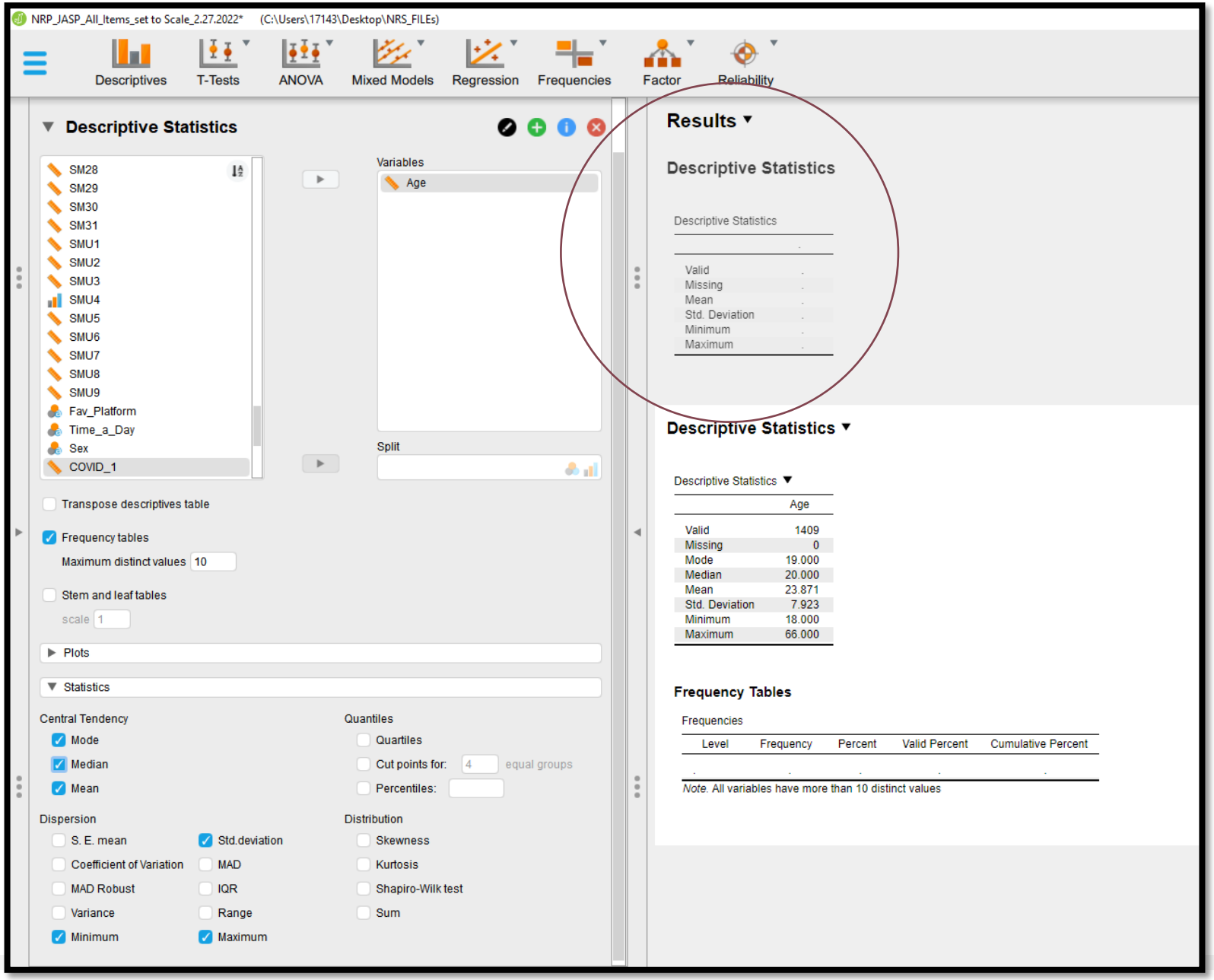
E_scale
28
16
45
27
35
34
44
45
34

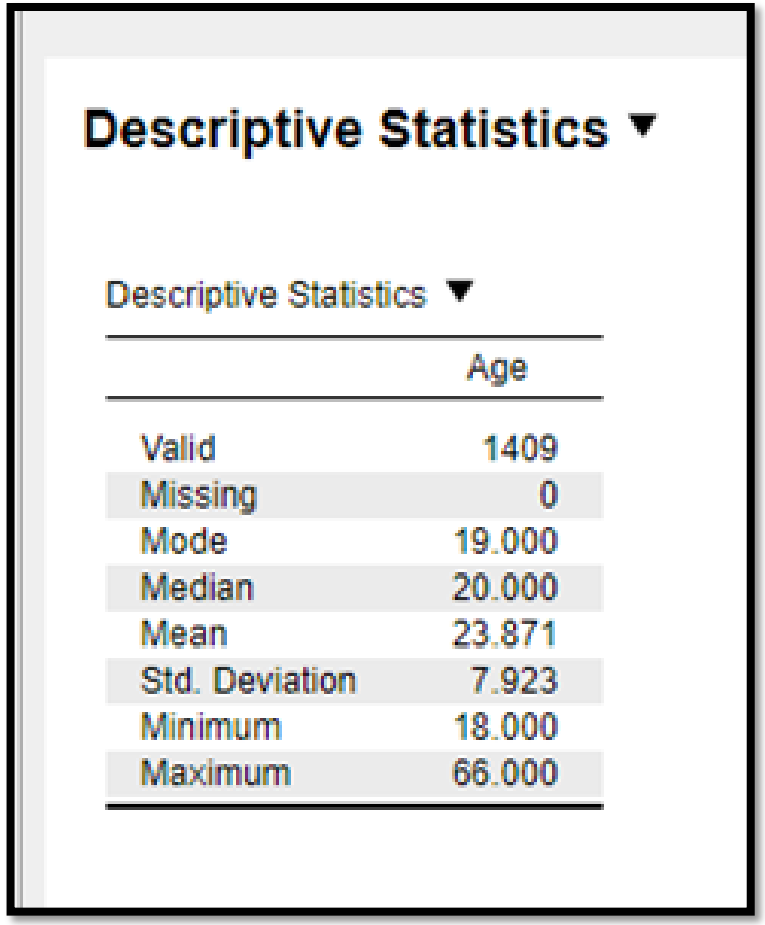
NRP_JASP_All_Items_set to Scale_All_scales_created_2.27.2022 (C:\Users\17143\Desktop\NRS_FILEs)

Descriptives | T-Tests | ANOVA | Mixed Models | Regression | Frequencies | Factor | Reliability

	CONNECTEDNESS_SCALE	EXTRAVERSION	AGREEABLENESS	CONSCIENTIOUSNESS	EMOTIONAL_STABILITY	OPENNESS	SHYNESS	SM_SCALE	SMU_SCALE
1	60.2	8	11	12	9	9	56	51	9
2	49	6	11	11	6	12	55	43	10
3	58.8	13	13	14	5	8	28	102	10
4	58.8	8	8	6	10	11	55	66	17
5	70	9	11	11	11	14	42	64	9
6	63	11	7	14	6	6	29	48	17
7	42	14	12	14	7	11	23	31	9
8	36.4	14	14	14	7	13	21	87	25
9	81.2	9	13	14	13	13	47	112	13

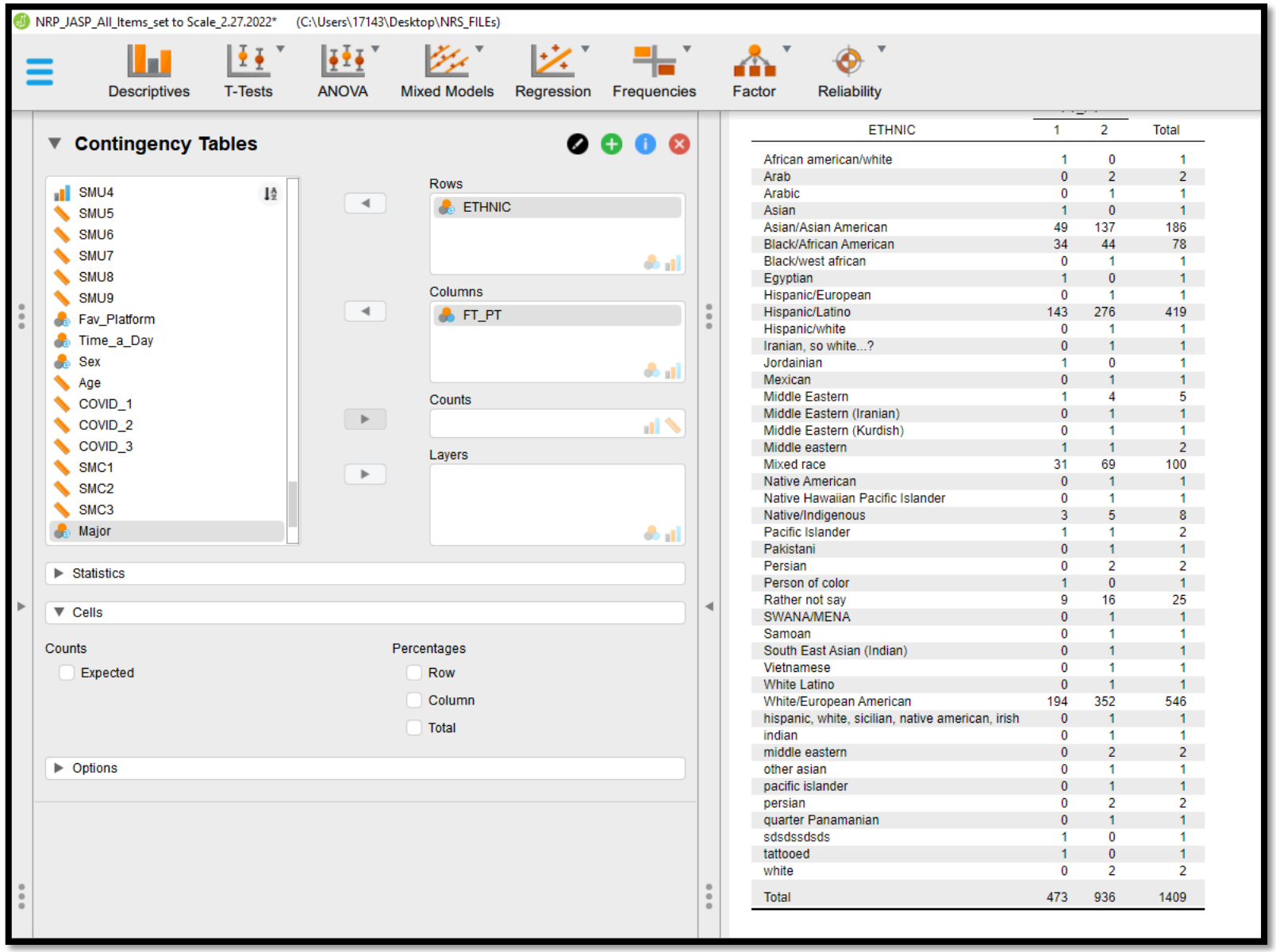
After all computed variables (scales) have been created, it is time to analyze your data.


NRP_JASP_All_Items_set to Scale_2.27.2022* (C:\Users\17143\Desktop\NRS_FILEs)
Descriptives
T-Tests
ANOVA
Mixed Models
Regression
Frequencies
Factor
Reliability
Descriptive Statistics
SM28
SM29
SM30
SM31
SMU1
SMU2
SMU3
SMU4
SMU5
SMU6
SMU7
SMU8
SMU9
Fav_Platform
Time_a_Day
Sex
COVID_1
Variables
Age
Split
Transpose descriptives table
Frequency tables
Maximum distinct values 10
Stem and leaf tables
scale 1
Plots
Statistics
Central Tendency
Mode
Median
Mean
Quantiles
Quartiles
Cut points for: 4 equal groups
Percentiles:
Dispersion
S. E. mean
Coefficient of Variation
MAD Robust
Variance
Minimum
Std.deviation
MAD
IQR
Range
Maximum
Distribution
Skewness
Kurtosis
Shapiro-Wilk test
Sum
Results
Descriptive Statistics
Descriptive Statistics
Valid
Missing
Mean
Std. Deviation
Minimum
Maximum
Descriptive Statistics
Descriptive Statistics
Age
Valid 1409
Missing 0
Mode 19.000
Median 20.000
Mean 23.871
Std. Deviation 7.923
Minimum 18.000
Maximum 66.000
Frequency Tables
Frequencies
Level Frequency Percent Valid Percent Cumulative Percent
Note. All variables have more than 10 distinct values


Descriptive Statistics
Descriptive Statistics
Age
Valid 1409
Missing 0
Mode 19.000
Median 20.000
Mean 23.871
Std. Deviation 7.923
Minimum 18.000
Maximum 66.000

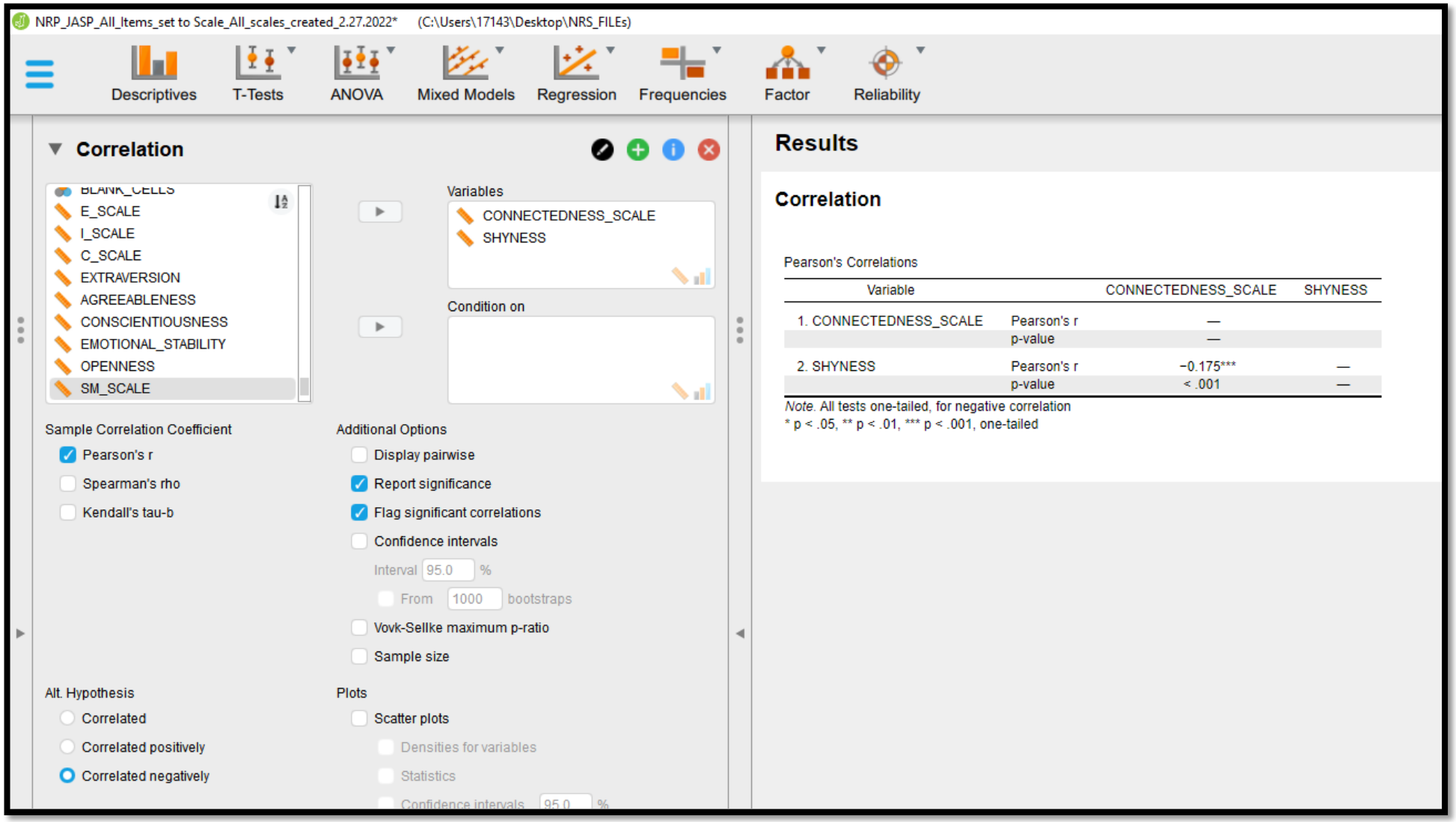
FT/PT and Ethnicity

1. Make sure FT/PT and Ethnic are set as nominal variables.
2. Select on Frequencies -> Classical -> Contingency Tables
3. Drag Ethnic to “Rows”
4. Drag FT/PT to columns
5. Under percentages, check “Row”



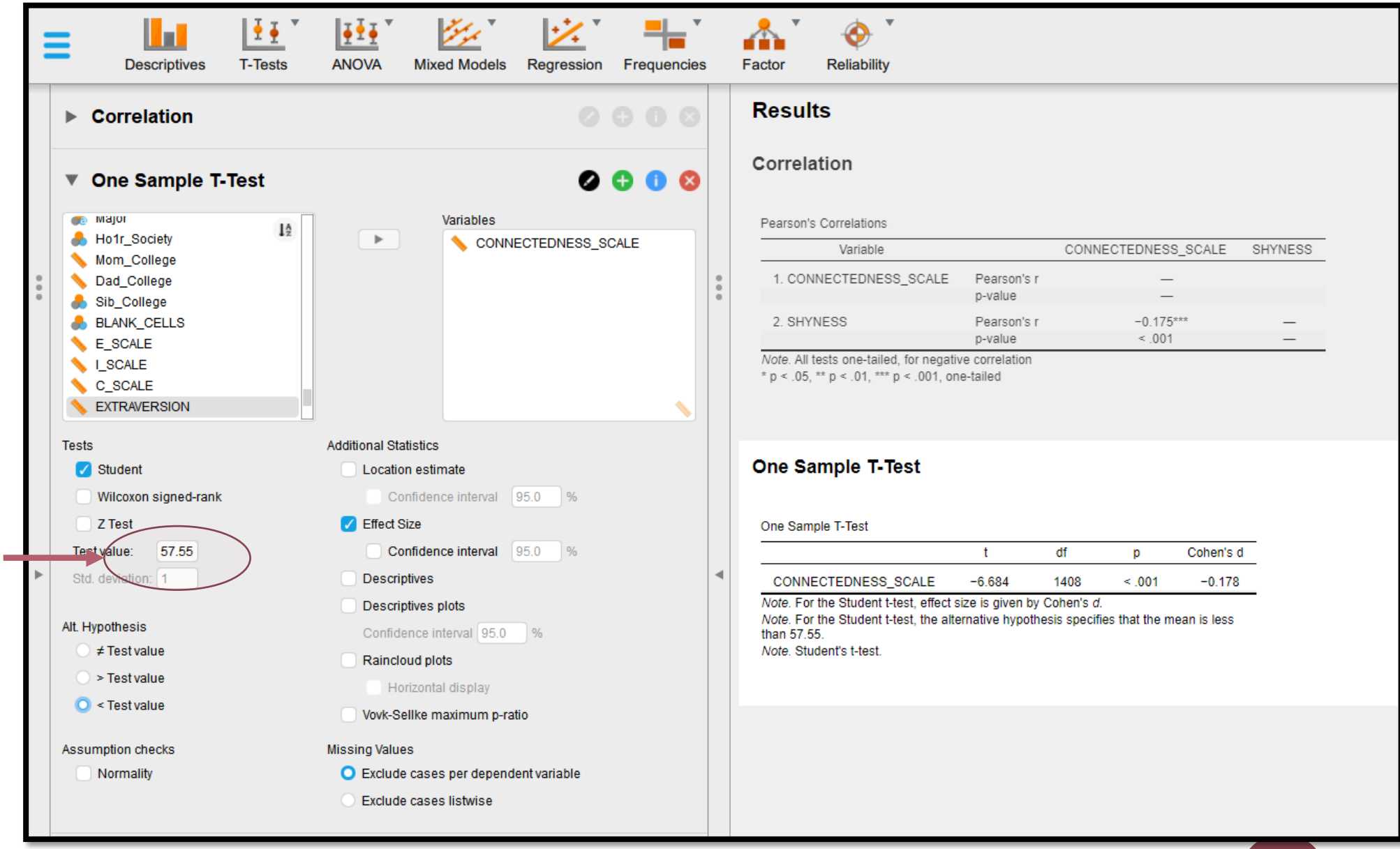
ETHNIC	1	2	Total
African american/white	1	0	1
Arab	0	2	2
Arabic	0	1	1
Asian	1	0	1
Asian/Asian American	49	137	186
Black/African American	34	44	78
Black/west african	0	1	1
Egyptian	1	0	1
Hispanic/European	0	1	1
Hispanic/Latino	143	276	419
Hispanic/white	0	1	1
Iranian, so white...?	0	1	1
Jordainian	1	0	1
Mexican	0	1	1
Middle Eastern	1	4	5
Middle Eastern (Iranian)	0	1	1
Middle Eastern (Kurdish)	0	1	1
Middle eastern	1	1	2
Mixed race	31	69	100
Native American	0	1	1
Native Hawaiian Pacific Islander	0	1	1
Native/Indigenous	3	5	8
Pacific Islander	1	1	2
Pakistani	0	1	1
Persian	0	2	2
Person of color	1	0	1
Rather not say	9	16	25
SWANA/MENA	0	1	1
Samoan	0	1	1
South East Asian (Indian)	0	1	1
Vietnamese	0	1	1
White Latino	0	1	1
White/European American	194	352	546
hispanic, white, sicilian, native american, irish	0	1	1
indian	0	1	1
middle eastern	0	2	2
other asian	0	1	1
pacific islander	0	1	1
persian	0	2	2
quarter Panamanian	0	1	1
sdsdssdsds	1	0	1
tattooed	1	0	1
white	0	2	2
Total	473	936	1409

Run Pearson coefficient of correlation tests…

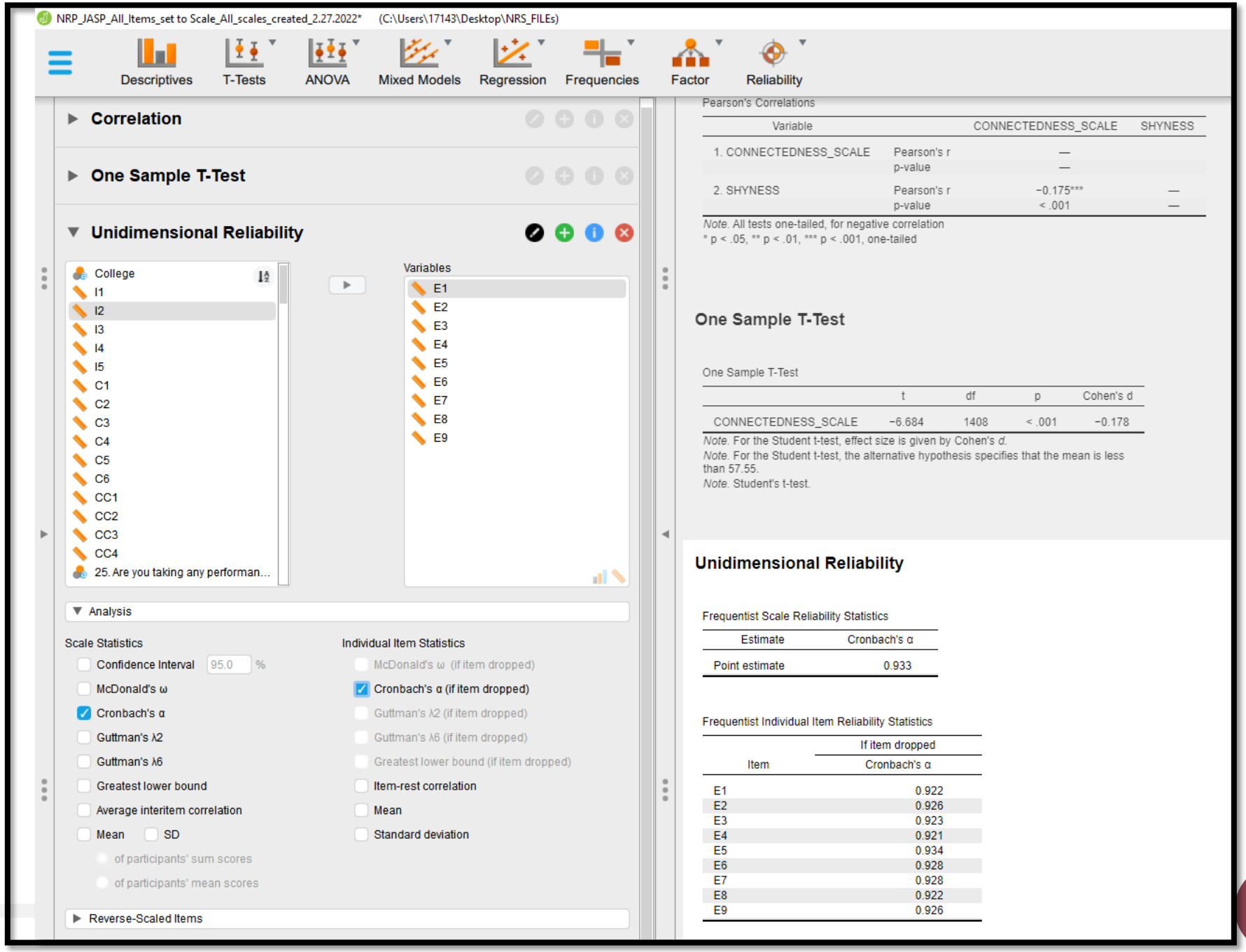


One-sample t-test

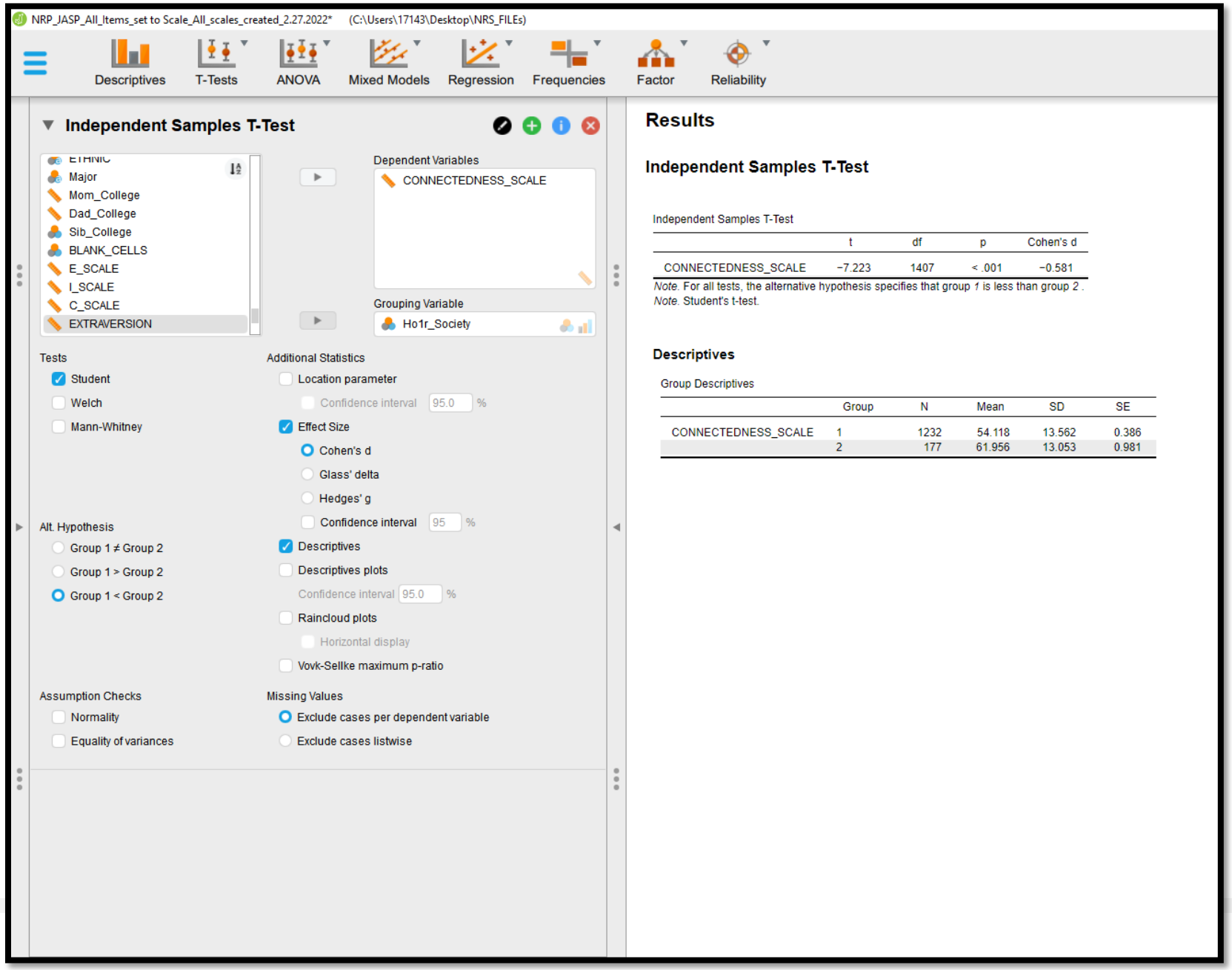
Connectedness mean in 2010 study was 57.55



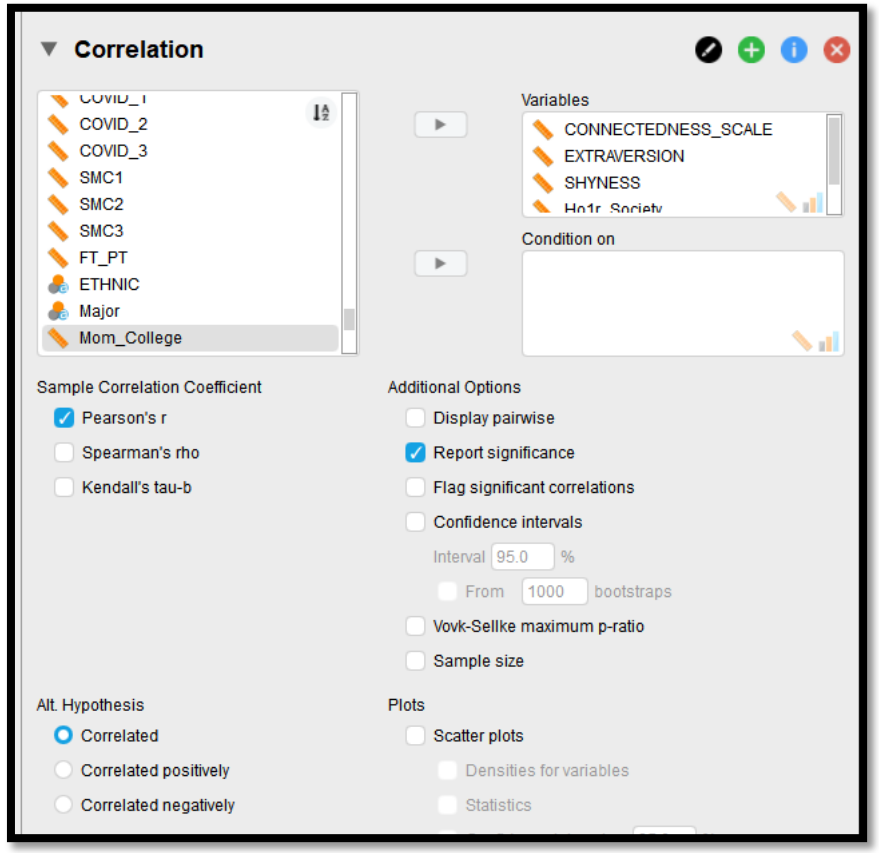
Scale reliability



Does honor society membership relate to greater college connectedness?



Correlations between variables

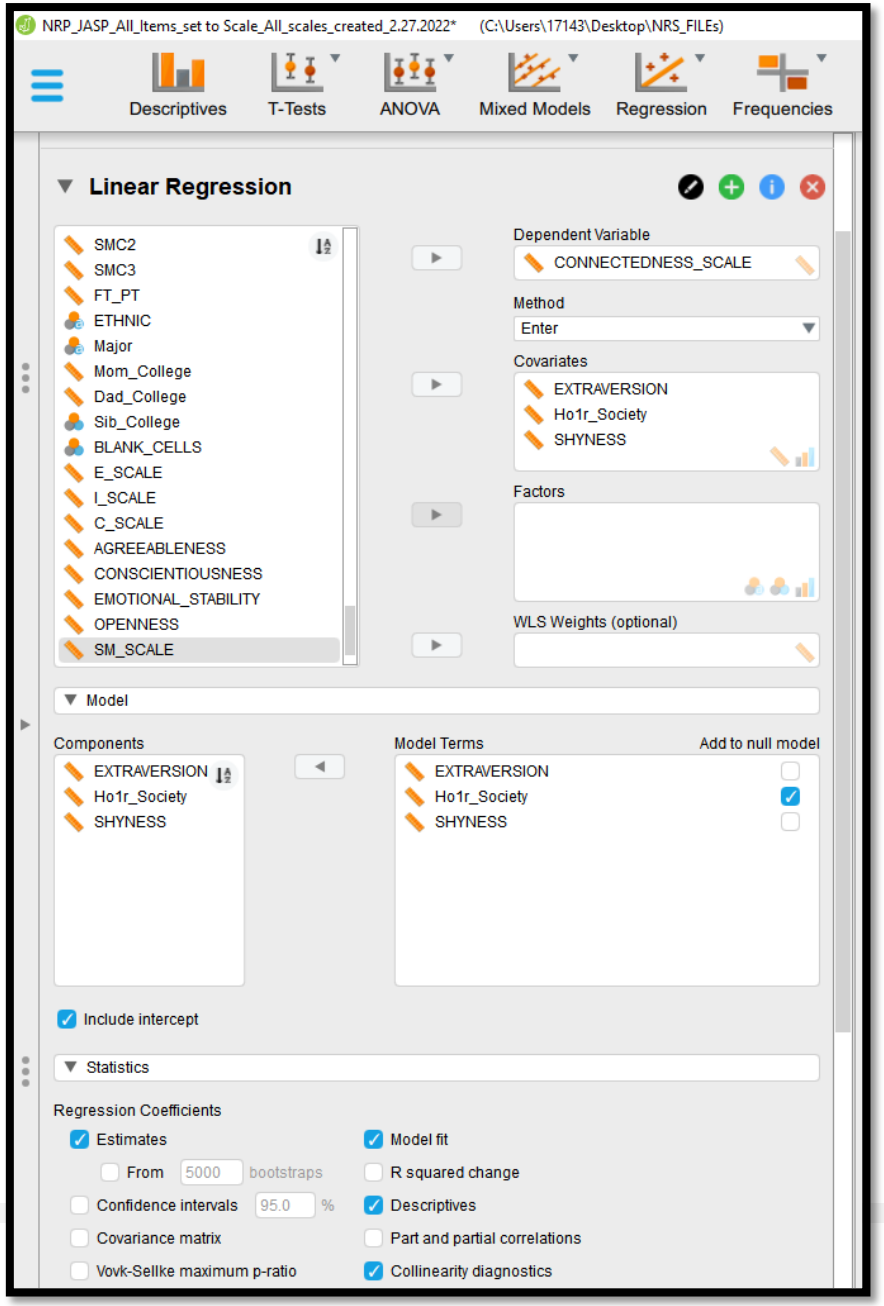


Correlation

Pearson's Correlations

Variable		CONNECTEDNESS_SCALE	EXTRAVERSION	SHYNESS	Ho1r_Society	E_SCALE
1. CONNECTEDNESS_SCALE	Pearson's r	—				
	p-value	—				
2. EXTRAVERSION	Pearson's r	0.226	—			
	p-value	< .001	—			
3. SHYNESS	Pearson's r	−0.175	−0.627	—		
	p-value	< .001	< .001	—		
4. Ho1r_Society	Pearson's r	0.189	−0.002	−0.006	—	
	p-value	< .001	0.948	0.816	—	
5. E_SCALE	Pearson's r	0.322	0.695	−0.712	0.014	—
	p-value	< .001	< .001	< .001	0.609	—

Multiple regression – using more than one X variable to predict Y



Model Summary - CONNECTEDNESS_SCALE

Model	R	R^2	Adjusted R^2	RMSE
H_0	0.189	0.036	0.035	13.499
H_1	0.298	0.089	0.087	13.132

Note. Null model includes Ho1r_Society

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
H_0	Regression	9507.270	1	9507.270	52.170	< .001
	Residual	256406.489	1407	182.236		
	Total	265913.759	1408			
H_1	Regression	23607.496	3	7869.165	45.629	< .001
	Residual	242306.264	1405	172.460		
	Total	265913.759	1408			

Note. Null model includes Ho1r_Society

Coefficients

							Collinearity Statistics	
Model		Unstandardized	Standard Error	Standardized	t	p	Tolerance	VIF
H_0	(Intercept)	46.280	1.273		36.347	< .001		
	Ho1r_Society	7.838	1.085	0.189	7.223	< .001	1.000	1.000
H_1	(Intercept)	42.405	2.736		15.499	< .001		
	EXTRAVERSION	0.834	0.140	0.194	5.943	< .001	0.607	1.647
	Ho1r_Society	7.838	1.056	0.189	7.425	< .001	1.000	1.000
	SHYNESS	−0.047	0.030	−0.052	−1.587	0.113	0.607	1.647

Descriptives

	N	Mean	SD	SE
CONNECTEDNESS_SCALE	1409	55.103	13.743	0.366
EXTRAVERSION	1409	7.693	3.200	0.085
Ho1r_Society	1409	1.126	0.332	0.009
SHYNESS	1409	54.073	15.163	0.404

Collinearity Diagnostics

	Variance Proportions

Links to some video tutorials for simple regression (review) and for understanding and doing multiple regression

- Basic linear regression (1 predictor) - https://www.youtube.com/watch?v=vKGphOrzze8

- Introduction to multiple linear regression (several predictors)
  - https://www.youtube.com/watch?v=-QYFCYwAwTwhttps://www.youtube.com/watch?v=nGolbykJRp8
  - https://www.youtube.com/watch?v=-QYFCYwAwTw

- Clear explanation about interpreting multiple linear regression results https://www.youtube.com/watch?v=p9GJkdNMmjQ
  - The collective contribution of the predictors
  - The unique contribution of each predictor

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Thank you!

See you next Friday…Jerry Rudmann

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