

# Figuring out Data Keys

A training seminar by Tate U.



You're gonna wanna look at this sheet: <https://bit.ly/423kn6b>

**Who?** - **Researchers** working on the research, **data analysts** interpreting the data, **other researchers** who wish to repeat our studies. Not participants or journals.

**What?** - A document that decodes both the data sheet (csv, Excel sheet) and the data engine (Google Forms, Qualtrics). Links **concepts in research** to **operationalization through questions to measurable data in the form of columns and rows**.

**When?** - **The earlier the better**. A researcher who developed the question *and* experimental design, *then* goes on to do analysis on the data and can use **infuse intuition**. This can be made up for later on, however, and is likely the case for undergrads (👉) who aren't building research experiments from the ground up.

**Where?** - Typically a **pdf**, sometimes an excel/sheets file. Keep it **on a cloud** where the newest version is always accessible to everyone conducting research

**But why?**

```

193 #clim_belong_Q73_1
194 ggplot(VPlotCleaned, aes(x = factor(FirstGen), y = clim_belong_Q73_1, fill = factor(FirstGen))) +
195   geom_violin(trim = FALSE, width = .9, bw = 6) +
196   scale_x_discrete(labels = c("0" = "No", "1" = "Yes")) +
197   scale_y_continuous(
198     breaks = seq(0, 100, by = 10),
199     labels = seq(0, 100, by = 10)
200   ) +
201   scale_fill_manual(values = c("1" = "#ffa400", "0" = "#2274a5")) +
202   labs(
203     title = "Level of Support Received as a Transfer Student",
204     x = "First Generation Student",
205     y = "Support Level (%)"
206   ) +
207   coord_cartesian(ylim = c(1, 100)) +
208   theme_minimal() +
209   theme(
210     plot.title = element_text(hjust = 0.5, size = 18, face = "bold"),
211     axis.title.x = element_text(size = 18, face = "bold"),
212     axis.title.y = element_text(size = 15, face = "bold"),
213     axis.text.x = element_text(size = 16),
214     axis.text.y = element_text(size = 16),
215     axis.line = element_line(color = "black"),
216     panel.grid.major.y = element_line(color = "gray80", size = 0.5),
217     panel.arid.minor.v = element_blank().
193:19 (Top Level) ↕

```

How do we know that variable `x`, `FirstGen`, is categorical and not ordinal/ratio?

How do we know that variable `y`, `clim_belong_Q73_1`, measured students' self reported level of support?

How can we tell that the scale of variable `y`, `clim_belong_Q73_1`, is 0-100?



1 : ovrtrans\_Q81\_4 4 Visible: 310 of 310 Variables

	Start Date	End Date	Status	Progress	Duration	Finished	Recorded	Consent	consent_Q133	self effc_Q2_1	self effc_Q2_2	self effc_Q2_3	self effc_Q2_4	self effc_Q2_5	self effc_Q2_6	self effc_Q2_7	self effc_Q2_8	self effc_Q2_9	self effc_Q2_10	self effc_Q3_1	self effc_Q3_2	
1	19-F...	19-F...	0	58.00	1088.0	0	26-F...	23	1	1	1	2	2	2	2	2	2	2	1	5	4	
2	24-F...	24-F...	0	100.00	3399.0	1	24-F...	23	1	2	2	2	3	2	2	2	2	1	5	3		
3	25-F...	25-F...	0	100.00	1063.0	1	25-F...	23	1	2	1	2	2	2	2	2	2	1	5	4		
4	26-F...	26-F...	0	100.00	1995.0	1	26-F...	23	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	14-M...	14-M...	0	100.00	1107.0	1	14-M...	23	1	2	1	3	2	2	1	2	1	5	5			
6	1-Ap...	1-Ap...	0	100.00	778.00	1	1-Ap...	23	1	2	1	3	2	3	3	3	3	3	5	4		
7	1-Ap...	1-Ap...	0	100.00	930.00	1	1-Ap...	23	1	2	2	2	4	3	3	3	3	3	3	3		
8	1-Ap...	1-Ap...	0	100.00	1306.0	1	1-Ap...	23	1	2	2	1	1	1	1	1	2	4	4			
9	1-Ap...	1-Ap...	0	100.00	2343.0	1	1-Ap...	23	1	2	2	2	2	1	1	1	2	5	4			
10	1-Ap...	1-Ap...	0	100.00	578.00	1	1-Ap...	23	1	1	1	1	1	1	2	2	1	5	5			
11	1-Ap...	1-Ap...	0	100.00	3316.0	1	1-Ap...	23	1	2	2	2	2	2	1	1	1	5	4			
12	1-Ap...	1-Ap...	0	100.00	1056.0	1	1-Ap...	23	1	1	1	1	2	3	3	3	2	5	5			
13	1-Ap...	1-Ap...	0	100.00	1155.0	1	1-Ap...	23	1	1	1	1	1	2	1	1	1	4	2			
14	1-Ap...	1-Ap...	0	100.00	33294	1	1-Ap...	23	1	1	1	3	2	2	1	1	1	5	3			
15	1-Ap...	1-Ap...	0	100.00	725.00	1	1-Ap...	23	1	2	2	2	1	2	2	1	1	4	4			
16	1-Ap...	1-Ap...	0	100.00	1247.0	1	1-Ap...	23	1	1	3	2	3	2	1	1	2	4	3			
17	1-Ap...	1-Ap...	0	100.00	1944.0	1	1-Ap...	23	1	1	1	2	1	2	1	1	1	4	4			
18	1-Ap...	1-Ap...	0	100.00	1763.0	1	1-Ap...	23	1	2	4	4	1	1	1	2	2	4	2			
19	1-Ap...	1-Ap...	0	100.00	1440.0	1	1-Ap...	23	1	1	1	2	1	2	2	1	1	5	3			
20	1-Ap...	1-Ap...	0	100.00	851.00	1	1-Ap...	23	1	2	1	1	1	2	2	2	2	4	4			
21	1-Ap...	1-Ap...	0	100.00	2112.0	1	1-Ap...	23	1	1	2	3	2	2	2	2	2	5	3			
22	1-Ap...	1-Ap...	0	100.00	2890.0	1	1-Ap...	23	1	1	2	2	3	1	2	2	1	5	4			
23	1-Ap...	1-Ap...	0	100.00	846.00	1	1-Ap...	23	1	2	1	2	1	2	3	2	1	5	3			
24	1-Ap...	1-Ap...	0	100.00	978.00	1	1-Ap...	23	1	1	1	1	2	1	1	1	1	5	5			
25	1-Ap...	1-Ap...	0	100.00	5782.0	1	1-Ap...	23	1	1	1	1	1	1	1	1	1	1	5	4		

What does ovrtrans\_Q81\_4 ask participants?

What does a value of '4' tell us about that answer choice?

If consent\_Q133 measures consent, is 1 a yes or a no?



	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
20	selfreg_Q3_3	Numeric	40	0	Can concentrate on school subjects	{1, No confidence at all}...	None	5	Right	Scale	Input
21	selfreg_Q3_4	Numeric	40	0	Can take notes in class	{1, No confidence at all}...					
22	selfreg_Q3_5	Numeric	40	0	Can go to the library	{1, No confidence at all}...					
23	selfreg_Q3_6	Numeric	40	0	Planning schoolwork	{1, No confidence at all}...					
24	selfreg_Q3_7	Numeric	40	0	Can organize schoolwork	{1, No confidence at all}...					
25	selfreg_Q3_8	Numeric	40	0	Can remember information	{1, No confidence at all}...					
26	selfreg_Q3_9	Numeric	40	0	Can find a place to study	{1, No confidence at all}...					
27	selfreg_Q3_10	Numeric	40	0	Self motivation to do schoolwork	{1, No confidence at all}...					
28	selfreg_Q3_11	Numeric	40	0	In-class participation	{1, No confidence at all}...					
29	selfreg_Q3_12	Numeric	40	0	Attending TA office hours	{1, No confidence at all}...					
30	selfreg_Q3_13	Numeric	40	0	Attending professor office hours	{1, No confidence at all}...					
31	motiv_Q5_1	Numeric	40	0	Helping family	{0, No}...					
32	motiv_Q5_2	Numeric	40	0	Being a role model	{0, no}...					
33	motiv_Q5_3	Numeric	40	0	Bringing honor to family	{0, No}...					
34	motiv_Q5_4	Numeric	40	0	Facilitating representation	{0, No}...					
35	motiv_Q5_5	Numeric	40	0	Giving back to community	{0, No}...					
36	motiv_Q5_6	Numeric	40	0	Better life for children	{0, No}...					
37	motiv_Q5_7	Numeric	40	0	Expanding world knowledge	{0, No}...	None	5	Right	Scale	Input
38	motiv_Q5_8	Numeric	40	0	Becoming an independent thinker	{0, No}...	None	5	Right	Scale	Input
39	motiv_Q5_9	Numeric	40	0	Exploring new interests	{0, No}...	None	5	Right	Scale	Input
40	motiv_Q5_10	Numeric	40	0	Exploring potential	{0, No}...	None	5	Right	Scale	Input
41	motiv_Q5_11	Numeric	40	0	Learning more about my interests	{0, No}...	None	5	Right	Scale	Input
42	motiv_Q5_12	Numeric	40	0	Expanding my understanding of the world	{0, No}...	None	5	Right	Scale	Input
43	resil_Q6_1	Numeric	40	0	I tend to bounce back quickly	{1, Strongly disagree}...	None	5	Right	Scale	Input
44	resil_Q6_2	Numeric	40	0	I have a hard time making it through	{1, Strongly disagree}...	None	5	Right	Scale	Input
45	resil_Q6_3	Numeric	40	0	I Recover From Stress Quickly	{1, Strongly disagree}...	None	5	Right	Scale	Input
46	resil_Q6_4	Numeric	40	0	It is Hard For Me To Snap Back After A St...	{1, Strongly disagree}...	None	5	Right	Scale	Input
47	resil_Q6_5	Numeric	40	0	I Usually Come Through Difficult Times wi...	{1, Strongly disagree}...	None	5	Right	Scale	Input
48	resil_Q6_6	Numeric	40	0	I Tend To Take A Long Time To Get over...	{1, Strongly disagree}...	None	5	Right	Scale	Input
49	tr_iden_Q8_1	Numeric	40	2	Importance of transfer identity as part of...	None	None	5	Right	Scale	Input
50	tr_iden_Q11_1	Numeric	40	2	How proud are you of your transfer ident...	None	None	5	Right	Scale	Input
51	tr_iden_Q77_1	Numeric	40	0	with Professors	{1, To my professor	None	5	Right	Scale	Input

Value Labels

Spelling...

Value Labels:

Value	Label
1	No confidence at all
2	Very little confidence
3	Some confidence
4	Much confidence
5	Complete confidence

?

Reset Cancel OK





Transfer Climate Survey Data Key 23-24

File Edit View Insert Format Data Tools Extensions Help

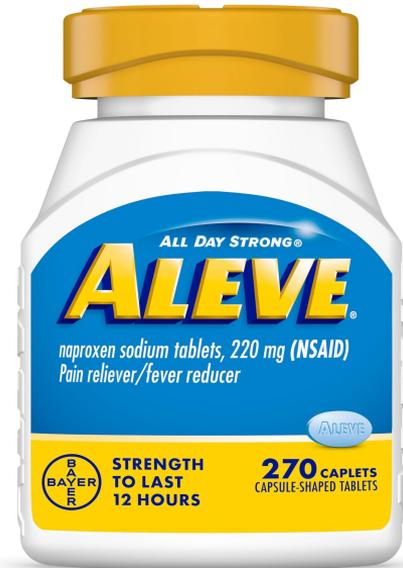
100% 123 Default 11

D256 First-generation college student

	A	B	C	D	
1	Key Variables on Qual	Relevant Data Extractor Notes		Name	Citation
2	consent_Q95				
3	consent_Q132				
4	consent_Q1	Binary	If no, remove data from dataset	Consent	
5	consent_Q133	Binary	If no, remove data from dataset	Transfer Student Y/N	
6	tb_Q97				
7	selfeffic_Q2.1	Mean, Ordinal		Time mgmt	Zimmerman, B. J.
8	selfeffic_Q2.2	Mean, Ordinal		Note taking	M. (1992). Self-m
9	selfeffic_Q2.3	Mean, Ordinal		Studying	attainment: The r
10	selfeffic_Q2.4	Mean, Ordinal		Research & Writing Papers	personal goal set
11	selfeffic_Q2.5	Mean, Ordinal		Good student	Research Journa
12	selfeffic_Q2.6	Mean, Ordinal		School and Academic Tasks	Basili E, Gomez J
13	selfeffic_Q2.7	Mean, Ordinal		Find Academic Work Interesting	Gerbinio M, Thard
14	selfeffic_Q2.8	Mean, Ordinal		Capable of Succeeding at UCSB	Multidimensional
15	selfreg_Q3.1	Mean, Ordinal	Can leave separate	Finishing homework by deadlines	Self-Efficacy (MS
16	selfreg_Q3.2	Mean, Ordinal		Study discipline and self regulation	across Italian and
17	selfreg_Q3.3	Mean, Ordinal		Can concentrate on school subjects	Chemers, M. M.,
18	selfreg_Q3.4	Mean, Ordinal		Can take notes in class	Academic self-eff
19	selfreg_Q3.5	Mean, Ordinal		Can go to the library	student performa
20	selfreg_Q3.6	Mean, Ordinal		Planning schoolwork	Educational Psyc
21	selfreg_Q3.7	Mean, Ordinal		Can organize schoolwork	https://doi.org/10
22	selfreg_Q3.8	Mean, Ordinal		Can remember information	
23	selfreg_Q3.9	Mean, Ordinal		Can find a place to study	
24	selfreg_Q3.10	Mean, Ordinal		Self motivation to do schoolwork	

+

Data Key Sheet4 Labels



They're the same picture.

	A	B	C	D	E
1	Key Variables on Qual	Relevant Data Extractor	Notes	Name	Citation
27	seireg_Q3.13	Mean, Ordinal		Attending professor office hours	
28	motiv_Q5.1	% yes, binary	motiv_Q5.1-motiv_Q5.12 is "Select all that apply"	Helping family	<a href="#">Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., &amp; Covarrubias, R. (2012). Unseen disadvantage: How American universities' focus on independence undermines the academic performance of first-generation college students. <i>Journal of Personality and Social Psychology</i>, 102(6), 1178–1197. <a href="https://doi.org/10.1037/a0027143">https://doi.org/10.1037/a0027143</a></a>
29	motiv_Q5.2	% yes, binary	The higher the %, the more participants cite ___ as a	Being a role model	
30	motiv_Q5.3	% yes, binary	motivator	Bringing honor to family	
31	motiv_Q5.4	% yes, binary	First 6 are interdependent, last 6 are independent	Facilitating representation	
32	motiv_Q5.5	% yes, binary		Giving back to community	
33	motiv_Q5.6	% yes, binary		Better life for children	
34	motiv_Q5.7	% yes, binary		Expanding world knowledge	
35	motiv_Q5.8	% yes, binary		Becoming an independent thinker	
36	motiv_Q5.9	% yes, binary		Exploring new interests	
37	motiv_Q5.10	% yes, binary		Exploring potential	
38	motiv_Q5.11	% yes, binary		Learning more about my interests	
39	motiv_Q5.12	% yes, binary		Expanding my understanding of the world	
40	resil_Q6.1	Mean, Ordinal	The closer to 6, the greater resilience	I tend to bounce back quickly	<a href="#">Smith, B.W., Dalen, J., Wiggins, K. et al. The brief resilience scale: Assessing the ability to bounce back. <i>Int. J. Behav. Med.</i> 15, 194–200 (2008). <a href="https://doi.org/10.1080/10705500802222972">https://doi.org/10.1080/10705500802222972</a></a>
41	resil_Q6.2	Mean, Ordinal	<b>Reverse Coded</b>	I have a hard time making it through	
42	resil_Q6.3	Mean, Ordinal	The closer to 6, the greater resilience	I Recover From Stress Quickly	
43	resil_Q6.4	Mean, Ordinal	<b>Reverse Coded</b>	It is Hard For Me To Snap Back After A Stressful Ev	
44	resil_Q6.5	Mean, Ordinal	The closer to 6, the greater resilience	I Usually Come Through Difficult Times with little trouble.	
45	resil_Q6.6	Mean, Ordinal	<b>Reverse Coded</b>	I Tend To Take A Long Time To Get over set-backs in my life.	
46	tr_iden_Q8	Mean, Ordinal	How strong transfer identity is a part of student identity	Importance of transfer identity as part of student ide	no citation we created these
47	tr_iden_Q11	Mean, Ordinal	How proud of being a transfer student	How proud are you of your transfer identity?	
48	tr_iden_Q77.1	% yes, binary		with Professors	
49	tr_iden_Q77.2	% yes, binary		with TAs	
50	tr_iden_Q77.3	% yes, binary		with Classmates	

Variables organized in order of occurrence in survey on Qualtrics\*\*. Label name includes uniformed shorthand for question area (for instance if 5 questions come from a validated prior measure). Why are there decimals?



Edit block

Tools ▾

Saved at 1:55 PM

Draft



Preview

Publish

Block behavior

Question randomization

Loop & merge

Format

Next/Previous button text

Although this is 1 question on Qualtrics, the csv it spits out separates columns by each data value given per option (on this question design, others vary)

Independent/Interdependent Motives <- Q area, usually separated by measure / assessments

motiv\_Q5 <- Shorthand + q #

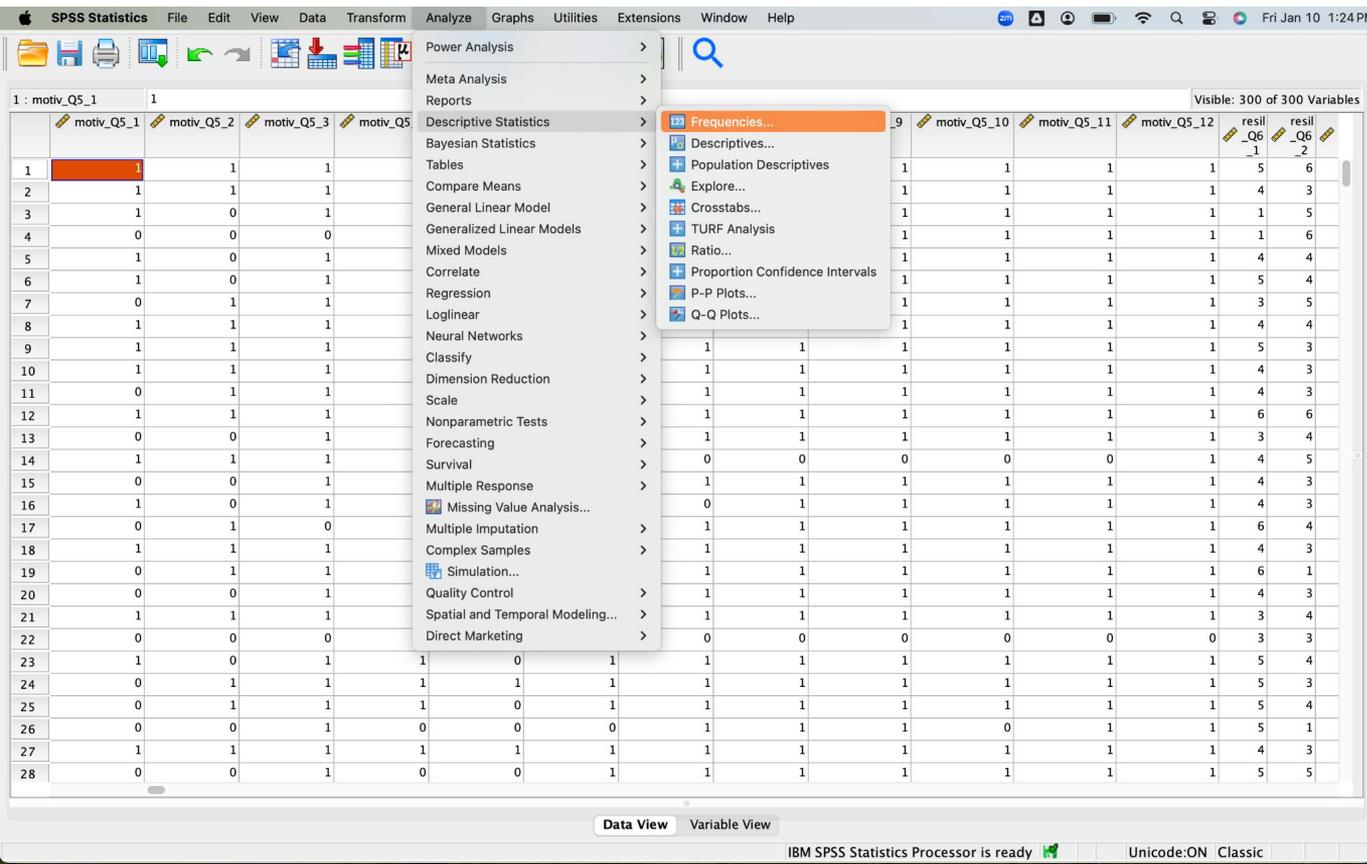


Below is a list of motivations for attending college. Please read each statement and indicate whether or not it was a top reason for you wanting to attend college. Mark "Yes" if it was a top reason for attending college and mark "No" if it was not a top reason for attending college.

	No	Yes
Help my family out after I'm done with college	<input type="radio"/>	<input type="radio"/>
Be a role model for people in my community	<input type="radio"/>	<input type="radio"/>
Bring honor to my family	<input type="radio"/>	<input type="radio"/>
Show that people with my background can do well	<input type="radio"/>	<input type="radio"/>
	No	Yes
Give back to my community	<input type="radio"/>	<input type="radio"/>
Provide a better life for my own children	<input type="radio"/>	<input type="radio"/>
Expand my knowledge of the world	<input type="radio"/>	<input type="radio"/>
Become an independent thinker	<input type="radio"/>	<input type="radio"/>
	No	Yes

# An exported SPSS file (.sav) reveals that qualtrics has split them into csv's

*Note: Qualtrics exports .sav files' decimals as underscores, but not its .csv's for R etc. This is why for the TSC I would only use .csv files exported from SPSS, which contained underscores*



The screenshot shows the SPSS Statistics interface. The 'Data View' tab is active, displaying a data table with 28 rows and 12 columns. The columns are labeled 'motiv\_Q5\_1' through 'motiv\_Q5\_12', 'resil\_Q6\_1', and 'resil\_Q6\_2'. The first column, 'motiv\_Q5\_1', has a value of 1 for all rows. The other columns contain binary values (0 or 1). A 'Frequencies...' dialog box is open over the data table, and the 'Analyze' menu is also visible.

	motiv_Q5_1	motiv_Q5_2	motiv_Q5_3	motiv_Q5_4	motiv_Q5_5	motiv_Q5_6	motiv_Q5_7	motiv_Q5_8	motiv_Q5_9	motiv_Q5_10	motiv_Q5_11	motiv_Q5_12	resil_Q6_1	resil_Q6_2
1	1	1	1	1	1	1	1	1	1	1	1	1	5	6
2	1	1	1	1	1	1	1	1	1	1	1	1	4	3
3	1	0	1	1	1	1	1	1	1	1	1	1	5	5
4	0	0	0	0	0	0	0	0	0	0	0	0	1	6
5	1	0	1	1	1	1	1	1	1	1	1	1	4	4
6	1	0	1	1	1	1	1	1	1	1	1	1	5	4
7	0	1	1	1	1	1	1	1	1	1	1	1	3	5
8	1	1	1	1	1	1	1	1	1	1	1	1	4	4
9	1	1	1	1	1	1	1	1	1	1	1	1	5	3
10	1	1	1	1	1	1	1	1	1	1	1	1	4	3
11	0	1	1	1	1	1	1	1	1	1	1	1	4	3
12	1	1	1	1	1	1	1	1	1	1	1	1	6	6
13	0	0	1	1	1	1	1	1	1	1	1	1	3	4
14	1	1	1	1	1	1	1	1	1	1	1	1	4	5
15	0	0	1	1	1	1	1	1	1	1	1	1	4	3
16	1	0	1	1	1	1	1	1	1	1	1	1	4	3
17	0	1	0	1	1	1	1	1	1	1	1	1	6	4
18	1	1	1	1	1	1	1	1	1	1	1	1	4	3
19	0	1	1	1	1	1	1	1	1	1	1	1	6	1
20	0	0	1	1	1	1	1	1	1	1	1	1	4	3
21	1	1	1	1	1	1	1	1	1	1	1	1	3	4
22	0	0	0	0	0	0	0	0	0	0	0	0	3	3
23	1	0	1	1	1	1	1	1	1	1	1	1	5	4
24	0	1	1	1	1	1	1	1	1	1	1	1	5	3
25	0	1	1	1	1	0	1	1	1	1	1	1	5	4
26	0	0	1	0	0	0	0	1	1	1	0	1	5	1
27	1	1	1	1	1	1	1	1	1	1	1	1	4	3
28	0	0	1	0	0	1	1	1	1	1	1	1	5	5

We must then as the data key makers intuit that it would be useful to know what proportion of a population had independent vs interdependent motivations

Even more usefully, each question asks about a more focused area. Key insights that could reveal theorized differences w/ specific populations/identities

Student  
view



Below is a list of motivations for attending college. Please read each statement and indicate whether or not it was a top reason for you wanting to attend college. Mark "Yes" if it was a top reason for attending college and mark "No" if it was not a top reason for attending college.

		No	Yes
motiv_Q5.1	Help my family out after I'm done with college	<input type="radio"/>	<input type="radio"/>
motiv_Q5.2	Be a role model for people in my community	<input type="radio"/>	<input type="radio"/>
motiv_Q5.3	Bring honor to my family	<input type="radio"/>	<input type="radio"/>
motiv_Q5.4	Show that people with my background can do well	<input type="radio"/>	<input type="radio"/>
		No	Yes
motiv_Q5.5	Give back to my community	<input type="radio"/>	<input type="radio"/>

## Anecdotal Use of Data Key - We can answer questions w/ data analysis software and a data key!

- 5th grade conclusions WPA project group wants to know if **Know Definition:Claim/Conclusion** predicts **Recognize Claim and Data Relationship** (Conclusion is a C supported by D)
  - These are variables that are assessed on some or all of our 5th grade assessments (5)
    - Which assessments are they on?
    - Which questions measure each variable
  - Choose method of analysis - what is the question? (focus is better than broad sweeps)
    - Because we have multiple instances (repeated measures) we can determine which ability (each question assesses 1 or more skills) develops earlier (suggests directionality).
    - Student performance is variable so we can determine if these skills are closely correlated (& conduct path analysis which can also suggest directionality) on avg.
    - We can even simplify the question - Do SciTrek (module) interventions show significant improvement in any or all of these skills and which are more useful?
      - If **higher order** skill assessment questions are rarely achievable by the population does this suggest a deficit or a barrier or possibly a necessary but unknown third variable that impacts **wholistic ability to form conclusions**?

Scale	Scale Details	Qualtrics Question Code	Scale Citation
Consent		Q1	
Premed	1 – premed 2– not premed  <i>pre_premed &amp; post_premed</i>	Q18	
Social Identities and Attitudes Scale  In Qualtrics	43 items  1 (strongly disagree) to 7 (strongly agree)  No reverse codes  Seven subscales: BI–Biology Identification ESC– Ethnicity Stigma Consciousness NegA–negative affect EI–ethnic identity	Q8 & Q9	Picho, K., & Brown, S. W. (2011). Can Stereotype Threat Be Measured? A Validation of the Social Identities and Attitudes Scale (SIAS). Journal of Advanced Academics, 22(3), 374-411. <a href="https://doi.org/10.1177/1932202X1102200302">https://doi.org/10.1177/1932202X1102200302</a>

Is this art?

Data Key for Syllabus project 6/12/23

Scale	Notes for coding	Citation	Notes from Pilot
Syllabus Rubric Note: Modified for students to use (originally for instructors)  Recommendation is to remove #1  Subscales Learning objectives 2 & 3 Learning assessments 4-8 Course organization 9 & 16 Classroom Environment 10-13 Perception of Professor 14-15 Assignments and Engagement 17&18	Average by sub scale  Coding: Learning Objectives Syllabus Rubric_2, Syllabus Rubric_3	<b>Palmer et al., 2014</b>	Classroom Environment: slightly skewed data (mean 3.8, SD 1.1)  Perception of Prof: students see professor positively
Learner-Centered Syllabus Design  Each Question is coded individually (no average)	Look at regression as predicting things. *Teacher, student, rationale, and syllabus focus are most interesting and related to predict	<b>Cullen and Harris, 2009</b>	Rationale and teacher role correlated Collaboration, student role and rationale, collab, teacher role; outside resources, syllabus

Key Variables on Qual	Relevant Data Extraction Notes	Name
seirreg_Q3.13	Mean, Ordinal	Attending professor office hour
motiv_Q5.1	% yes, binary	Helping family
motiv_Q5.2	% yes, binary	The higher the %, the more participants cite ___ as a Being a role model
motiv_Q5.3	% yes, binary	motivator
motiv_Q5.4	% yes, binary	First 6 are interdependent, last 6 are independent
motiv_Q5.5	% yes, binary	Facilitating representation
motiv_Q5.6	% yes, binary	Giving back to community
motiv_Q5.7	% yes, binary	Better life for children
motiv_Q5.8	% yes, binary	Expanding world knowledge
motiv_Q5.9	% yes, binary	Becoming an independent thinker
motiv_Q5.10	% yes, binary	Exploring new interests
motiv_Q5.11	% yes, binary	Exploring potential
motiv_Q5.12	% yes, binary	Learning more about my interest
resil_Q6.1	Mean, Ordinal	The closer to 6, the greater resilience
resil_Q6.2	Mean, Ordinal	<b>Reverse Coded</b>
resil_Q6.3	Mean, Ordinal	The closer to 6, the greater resilience

Data Key 22-23 academic year surveys

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A1:E1 Administrator week 0 Section 100 and 200

	A	B	C	D	E
1	<b>Administer week 0 Section 100 and 200</b>				
2	Variable Name	Full Question	Theme	Values	Project
3	STEM	<b>Please rate the degree to which you agree or disagree with the following statement concerning your confidence in your abilities to function as a scientist in your area.</b>			
4	s1_pits1_ees	I am confident that I can use technical science skills (use of tools, instruments, and techniques)	Emotional Efficacy Subscale	1=strongly disagree; 2=somewhat disagree; 3=Neither agree nor disagree; 4=Somewhat agree; 5=Strongly agree	ATP
5	s1_pits2_ees	I am confident I can generate a research question to answer	Emotional Efficacy Subscale	1=strongly disagree; 2=somewhat disagree; 3=Neither agree nor disagree; 4=Somewhat agree; 5=Strongly agree	ATP
6	s1_pits3_ees	I am confident that I can figure out what data/observations to collect and how to collect them	Emotional Efficacy Subscale	1=strongly disagree; 2=somewhat disagree; 3=Neither agree nor disagree; 4=Somewhat agree; 5=Strongly agree	ATP
7	s1_pits4_ees	I am confident that I can use scientific literature and reports to guide my research	Emotional Efficacy Subscale	1=strongly disagree; 2=somewhat disagree; 3=Neither agree nor disagree; 4=Somewhat agree; 5=Strongly agree	ATP
8	s1_pits5_ees	I am confident that I can develop theories (integrate and coordinate results from multiple studies)	Emotional Efficacy Subscale	1=strongly disagree; 2=somewhat disagree; 3=Neither agree nor disagree; 4=Somewhat agree; 5=Strongly agree	ATP
9		<b>Please rate the degree you agree or disagree with the following statements concerning your sense of yourself as a potential biology major.</b>			
10	s1_pits6_bmi	I have a strong sense of belonging to the community of biology majors	Modified Biolgooy Major Identity	1=strongly disagree; 2=somewhat disagree; 3=Neither agree nor disagree; 4=Somewhat agree; 5=Strongly agree	ATP
11	s1_pits7_bmi	I have come to think of myself as a "biology major"	Modified Biolgooy Major Identity	1=strongly disagree; 2=somewhat disagree; 3=Neither agree nor disagree; 4=Somewhat agree; 5=Strongly agree	ATP
12			Modified Biolgooy Major Identity	1=strongly disagree; 2=somewhat disagree; 3=Neither agree nor disagree;	