**Description of QuaRCS Variables**

|  |  |
| --- | --- |
| **Variable Name** | **Description** |
| Identifier | anonymous identifier (replaces student names) |
| Semester\_Year | semester and year that the QuaRCS was administered |
| Completed\_ALL\_PRE | binary variable describing whether all quantitative questions were completed (always 1 for this dataset) |
| Duplicates\_PRE | variable describing whether a student completed the assessment more than onc |
| PRE\_STARTDATE, PRE\_ENDDATE | Date/time instrument was started and finished |
| PRE\_TIME | elapsed time between startdate and enddate |
| PRE\_SCHOOL | Code corresponding to school where instrument was adminsitered |
| PRE\_INSTR\_UA, PRE\_INSTR\_STANFORD, PRE\_INSTR\_VASSAR, PRE\_INSTR\_AUSTINCC, PRE\_INSTR\_UIUC, PRE\_INSTR\_PIMA | Code corresponding to individual instructors at institutions. Blank if not a student at this institution |
| PRE\_PCCCRS | For Pima community college students, code indicating which course enrolled in |
| PRE\_Q## | These are the quantitative questions on the assessment |
| PRE\_Q##CF | These are the confidence rankings that follow each question on the assessment |
| PRE\_Q##\_complete | a binary variable indicating whether (1) or not (0) a student answered the question. Used for computing completeness |
| PRE\_Q##\_scored | a binary variable indicating whether the answer was correct (1) or incorrect (0) |
|  |  |
| PRE\_DIFF, PRE\_DIFF\_REV | Perceived difficulty of the assessment  1= very easy  2 = easy  3 = moderate  4 = difficult  5 = very difficult |
| PRE\_FREQEN | Perceived frequency of encounters with similar situations in daily life  1 = almost never  2 = about once per year  3 = about once per month  4 = about once per week  5 = daily |
| PRE\_CALC | Estimate of how much used calculator  1 = all or almost all of the questions  2 = ~ 75%  3 = ~50%  4 = ~25%  5 = none, or only 1-2 |
| PRE\_DAILYM, PRE\_DAILYG | Perceived frequency of encounters with math/graphs in daily life  1 = never  2 = infrequently  3 = sometimes  4 = frequently |
| PRE\_ATT\_1, PRE\_ATT\_2, PRE\_ATT\_3, PRE\_ATT\_4 | Students place math on a 4 point scale between two opposite adjectives (1= positive adjective, 4 = negative adjective)  1= interesting to boring  2 = useful to useless  3 = east to hard  4 = fun to boring |
| PRE\_LK1, PRE\_LK2, PRE\_LK3, PRE\_LK4, PRE\_LK5 | Likert scale level of agreement with statements where 1 = strongly agree, 2 = agree, 3 = disagree and 4=strongly disagree  LK1 = I feel confident using numbers in my non-math courses  LK2 = I feel confident using numbers in my daily life  LK3 = Numerical skills are important to the understanding of science  LK4 = Numerical skills are important in my daily life  LK5 = I am satisfied with my current level of numerical skill |
| PRE\_PREVMT | Most recent math course  1 = taking one now  2 = within the last year  3 = within 2 years  4 = within 3 years  5 = >3yr ago |
| PRE\_MOREMT, PRE\_MORESC | How many more math/science courses in college |
| PRE\_WHYCS\_1-7 | Why did the student take this course?  1=It is a prerequisite for courses in my major  2= To fulfill a university general education requirement  3= It sounded interesting  4= It sounded easy  5= I heard the class was good  6= I heard the instructor was good  7= other |
| PRE\_YEAR | What year in college  1 = freshman  2 = sophomore  3 = junior  4 = senior  5 = other |
| PRE\_MAJOR\_... | A series of binary variables for each major choice.  HUM = humanities  ARTS = arts  SOCSCI = social sciences  EDU = education  SCI = science  EMC = engineering, math or computer science  BUS = Business-related  HEALTH = health-related  TRADE = trade-specific  JOUR = journalism  GEN = general studies  UND = undecided  OTHER = other |
| PRE\_WHYMAJ# | A series of binary variables indicating whether (1) or not (0) students selected each of the following reasons for choosing their major  1 = I like the subject  2 = I feel that it will help me get a job that I will enjoy after graduation  3 = I feel that it will help me get a well-paying job after graduation  4 = I am good at it  5 = I chose a major that would avoid math as much as possible  6 = I chose a major that would avoid writing as much as possible  7 = I’m not sure yet  8 = Other |
| PRE\_AGE | Student age  1 = under 18 (removed from this sample)  2 = 18-25  3 = 26-35  4 = 36-45  5 = 46-55  6 = 56+ |
| PRE\_GENDER | Student gender  1 = male  2 = female  3 = other |
| PRE\_RACE\_... | A series of binary variables indicating whether (1) or not (0) a student selected each race  AA = African American  AS = Asian or Pacific Islander  CAUC = Caucasian (non-hispanic)  HIS = Hispanic or Latino  NA = Native American  OTHER = other  PNTS = prefer not to specify |
| PRE\_DIS\_... | A series of binary variables indicating whether (1) or not (0) a student selected a disability  PHYS = physical disability  COG = cognitive disability  LEARN = learning disability  PNTS = prefer not to specify |
| PRE\_HSUS, PRE\_ELEM\_WHERE, PRE\_MIDDLE\_WHERE, PRE\_HS\_WHERE | A binary variable indicating whether (1) or not (0) students K12 education was done abroad, and text variables indicating where for elementary (ELEM), middle (MIDDLE) and high school (HS) |
| PRE\_EFFORT | Student self-assessment of how hard they tried on the instrument  1 = I just clicked through and chose randomly to get credit  2 = I didn’t try very hard  3 = I tried for a while and then got bored  4 = I tried pretty hard  5 = I tried my best on all or most of the questions |
| PRE\_SCORE | Score on the assessment (sum of PRE\_Q##\_scored) |
| PRE\_compete\_total\_percent | Percentage of questions completed |
| PRE\_CF\_total | Sum of all confidence rankings |
| PRE\_CF\_mean | Mean confidence ranking |
| PRE\_AGE\_NEW | Rebinned ages with all >35 collapsed into one |
| FAC1\_1 | A composite variable predicting students’ numerical self-efficacy |
| FAC1\_2 | A composite variable predicting students’ perception of numerical relevancy |
| FAC1\_3 | A composite variable predicting students’ academic maturity |
| ZPR\_1 | A model variable predicting student score on the assessment from the three variables above |
| ZRE\_1 | The differences between predicted score (variable above) and actual score |
| STEM\_MAJOR | A binary variable indicating whether (1) or not (0) a student is a STEM major |

FAC1\_1

FAC2\_1

FAC3\_1

ZPR\_1

ZRE\_1

STEM\_MAJOR

WHYCS\_COMP

MAJOR\_COMP

WHYMAJ\_COMP

RACE\_COMP

DIS\_COMP